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PHYTOLOGIA MEMOIRS VII

AN INTERNATIONAL CENSUS OF THE CONIFERAE, I.

Compiled by

JOHN SILBA

**Woody Plant Taxonomist, Agricultural and Technical College, Farmingdale, New York.
Botanical Consultant, 198 West Hoffman Avenue, Lindenhurst, New York 11757**

PHYTOLOGIA MEMOIRS are published by Harold N. Moldenke and Alma L. Moldenke,
303 Parkside Road, Plainfield, N. J. 07060, USA, as an
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Preface

For the past several decades botanical expeditions into poorly explored regions of the earth have discovered hidden populations of many taxa of the Coniferae. Many authors have realized that some of these populations represent new genera and new species. However, due to the lack of adequate material in many herbaria several authors have published new taxa on very scarce data. According to my research several of these new populations of the Coniferae are not in fact new species, but are merely range extensions of variable taxa. The purpose of this paper is to solve most of these discrepancies by means of a comprehensive checklist of the Coniferae.

Several authors who recently attempted comprehensive reviews of the Coniferae include Debazac (1964), Dallimore and Jackson (1966), Gaussen (1960-1979) and Krussmann (1972). Gaussen had too broad taxonomic viewpoints. The other authors named here were somewhat conservative in their treatments, but they had scarce data on many Asiatic species in particular.

As a result of an extensive review of the literature and examination of herbarium material on my part there is a great need for a revised checklist of the Coniferae. I have studied herbarium material of the Coniferae at the British Museum (BM), Edinburgh (E), Harvard (A, GH), Kew (K), Missouri (MO), New York (NY), Paris (P), Philadelphia (PH) and Washington D.C. (US).

I will not list herbarium specimens here, with the only exception of the naming of a new taxon. This paper will only attempt to review the nomenclature and distribution of the taxa.

I would like to express my gratitude to Professor David J. De Laubenfels for a critical review of taxonomic viewpoints and comparisons of herbarium material during my visit to Syracuse University during July 1983 and March 1984. Special thanks also go to Dr. Harold N. Moldenke for aiding in the publication of this manuscript.

Taxonomic Concepts

There have been varied viewpoints on the taxonomic treatment of infraspecific taxa of the Coniferae. In order to insure conformity in this manuscript only the term "variety" will be used. As a whole most authors have used the term "variety" for the treatment of infraspecific taxa of the Coniferae, notably since Carriere (1867). The terms "subspecies" and "formas" are no longer applied in common usage in the United States. As explained by Little (1970) the terms "subspecies" and "formas" lead to too broad concepts of a species; originally a species could have subspecies, a subspecies could have varieties and varieties could have formas. Such broad treatments have little purpose other than perhaps that of a horticultural interest. It seems apparent that species with wide distributions will naturally have wide genetic differences. Also, it is often discovered that "cultivars" in cultivation are sometimes found in the wild. If a small population of odd mutations occurs in the wild and only has minor differences from the species in morphological characteristics some of these should be named as "cultivars" or "strains." To avoid excessive taxonomic "splitting" only as many as four varieties of a species are recognized here.

As to common names many used here are adopted from Gordon (1875). In several recently named genera new common names are adopted here. I have used the generic name where it is appropriate, i.e.: *Araucaria bidwillii* is called "Bunya Bunya *Araucaria*." Several genera of the *Podocarpaceae* are named according to the derivation of the scientific name. Still other names are derived from the type locality of the taxon. As a whole I have tried to use standard common names accepted in current literature.

The treatment of the individual Conifer orders accepted here is that of Florin (1955), who recognized three orders. The treatment of the Conifer families is that of Delaubenfels (pers. comm. March 1984), seven families are accepted here. The treatment of the genera of the Coniferae is that of myself and De Laubenfels (pers. comm., March 1984), sixty genera of Conifers are accepted here. A total of five hundred and fifty four species of Conifers are accepted here. I will not discuss different sections or subgenera of the varied genera of the Coniferae. Further, only recently named genera will be discussed as to taxonomic distinctions. The treatment used here and number of species accepted is as follows:

Order *Ginkgoales*: Family *Ginkgoaceae*; Genus *Ginkgo*-1

Order *Taxales* : Family *Taxaceae*; Genera *Amentotaxus* -2,
Austrotaxus-1, *Pseudotaxus*-1, *Taxus*-7, *Torreya*-5
 Family *Cephalotaxaceae*; Genus *Cephalotaxus*-4

Order *Coniferales*: Family *Podocarpaceae*; Genera *Acropyle*-2,
Dacrycarpus -9, *Dacrydium*-25, *Decussocarpus* -2,
Falcatifolium-5, *Halocarpus*-3, *Microcachrys*-1,
Microstrobilus-2, *Parasitaxus*-1, *Phyllocladus*-5,
Podocarpus-94, *Prumnopitys*-10, *Saxaegothaea* -1.

Order Coniferales: Family Araucariaceae; Genera *Araucaria*-19,
Agathis-20.

Family Cupressaceae; Genera *Actinostrobus*-2,
Callitris-14, *Calocedrus*-3, *Chamaecyparis*-7, x *Cupressocyparis* -3,
Diselma-1, *Fitroya*-1, *Fokiena*-1, *Juniperus*-50, *Libocedrus*-8,
Microbiota-1, *Neocallitropsis*-1, *Pilgerodendron*-1, *Platycladus* -1,
Tetraclinis-1, *Thuja*-5, *Thujopsis*-1, *Widdringtonia* -3.

Family Taxodiaceae ; Genera *Athrotaxis*-3,
Cryptomeria-1, *Cunninghamia*-2, *Glyptostrobus*-1, *Metasequoia*-1,
Sciadopitys-1, *Sequoia*-1, *Sequoiadendron*-1, *Taiwania*-1, *Taxodium*-2.

Family Pinaceae; Genera *Abies*-39, *Cedrus*-2,
Keteleeria-2, *Larix*-9, *Picea*-33, *Pinus*- 93, *Pseudolarix*- 1,
Pseudotsuga-4, *Tsuga*-10

ABIES (Plin. ex Tourn.) Mill.

(Pinaceae)

Gard. Dict. Abr. ed. 4, v.1 (1754)

In his monograph Liu (1972) recognizes 39 species of *Abies*. Most newly named Chinese taxa appear to be mere variants of *A. delavayi* and *A. fargesii* not worth recognizing.

1-*A. alba* Mill.

"Common Silver Fir"

Gard. Dict. ed. 7. 110,2 (1759)=*A. pardei* Gaussen, Trav. Lab. For. Toul.
1,2:5, f. (1928).

France; Switzerland; Germany; Austria; Bulgaria; USSR; 300-1950m. altitude.

2-*A. amabilis* Dougl. ex Forbes

"Pacific Silver Fir"

Pinet. Woburn. 125, pl. 44 (1839).

Canada: W. British Columbia; U.S.A.: S.E. Alaska to N.W. California, 305-
1829 m.

3-*A. balsamea* (L.) Mill.

"Balsam Fir"

Gard. Dict. ed. 8, *Abies* no. 3 (1768)

Canada: S. Yukon to Newfoundland. U.S.A.: E. Minnesota to W. Virginia to 1219 m.

4-*A. beshanzuensis* M.H. Wu

"Chekiang Fir"

Acta Phytotax. Sin. 14(2): 19, pl.1, illus. 1 (1976)

China, Chekiang, Beshanzu to 1700 m. altitude.

5-*A. bracteata* D. Don ex Poiteau

"Bristlecone Fir"

Rev. Hort., ser. 2,4: 7 (1845) = *A. venusta* (Dougl.) K. Koch, Dendrol. 2(2): 210 (1873).

U.S.A.: California; Monterey County, Santa Lucia Mountains, 610-1524 m.

6-A. *cephalonica* Loud.

"Grecian Fir"

Gard. Mag. 14: 81 (1838)

Greece: Epirus to Euboea Region, 760-2000 m.

6b-A. *cephalonica* var. *graecca* (Frans) Liu

"Apollo Fir"

Monogr. Gen. *Abies*. 222 (1972) = *A. cephalonica* var. *apollinis* (Link)

Beissn., Syst. Eintheil. Conif. 43 (1887) = *A. nordmanniana* subsp.

equi-trojani (Asch. et Sinb.) Coode et Cull., Not. Roy. Bot. Gard. 26. no. 2. 167 (1965).

Greece: Mt. Parnassus to W. Anatolia, W. Turkey, 760-2000m.

7-A. *chensiensis* Franch.

"Shensi Fir"

Journ. Bot. 8. 265 (1899)

China: S.E. Kansu; Shensi; W. Hupeh; N.W. Yunnan, 2100-3500m.

7b-A. *chensiensis* var. *ernestii* (Rehd.) Liu

"Chien-Lu Fir"

Monogr. Gen. *Abies*. 135. t. 7b. 48b. (1972).

China: Tibet; Yunnan, W. Szechuan to W. Hupeh, 2500-3800 m.

8- *A. cilicica* (Ant. ex Klotsch.) Carr.

"Cilician Fir"

Tr. Conif. ed. 1. 299 (1855).

E. Turkey: Antitaurus Mts.; N. Syria; Lebanon, 1000-2100m.

9-A. *concolor* (Gord. et Glend.) Lindl.

"Colorado White Fir"

Hildebr., Verbr. Conif. 261 (1861)

U.S.A.: S.E. Idaho to W. New Mexico, 610-3353 m.

9b-A. *concolor* var. *lowiana* (Gord.) Lemm.

"California White Fir"

Handb. W.-Am. Cone-Bear. ed.3. 64 (1895) = *A. lowiana* (Gord.) A. Murr.,

Proc. R. Hort. Soc. 3: 317 (1863).

U.S.A.: S.W. Oregon to N. Baja California, Mexico.

10- *A. delavayi* (Van Tiegh.) Franch.

"Delavay Fir"

Journ de Bot. 13: 255 (1899) = *A. delavayi* var. *motuoensis* Cheng

et Fu, Acta Phytotax. Sin. 13(4): 83 (1975) = *A. fabri* (Mast.) Craib,

Notes Bot. Gard. Edinb. 11: 278. f. 164 (1919) = *A. minensis* Bord.-Rey.

et Gaussen, Trav. Lab. For. Toul. I. 4(15): 8. f.1-12 (1947)

= *A. nukiangensis* Cheng et Fu, Acta Phytotax. Sin. 13(4): 83, pl. 13, illus. 1-7 (1975).

N.E. India; N. Burma; China: Tibet ; N.W. Yunnan, 1500-4300 m.

10b. *A. delavayi* var. *georgiei* (Orr) Melv.

"George Fir"

Kew Bull. 1958(3): 533 (1958) = *A. georgei* Orr, Notes Bot. Gard.

Edinb. 18: 1. 146 . t.236 (1933). = *A. ziyuanensis* L.K. Fu et S. L.

Mo, Acta Phytotax. Sin. 18(2): 206. pl.1. (1980).

N. Burma; China: Yunnan; Szechuan to N.E. Kwangsi Chuang, 2600-4200 m.

10c. *A. delavayi* var. *smithii* (Vig. et Gauss.) Liu

"Forrest Fir"

Monogr. Gen. *Abies*. 143. t. 8b (1972) = *A. delavayi* var. *forrestii*

(Rog.) Jacks. ex Chitt., Conif. Cult. 245. f. 76 (1932) = *A. yuanbao-shanensis* Y.J. Lu et L.K. Fu, Acta Phytotax. Sin. 18 (2): 206, pl. 1 (1980).

N. Burma; China: N.W. Yunnan; S.W. Szechuan to N. Kwangsi Chuang, 1700-4460m.

11-A. *durangensis* Mart.

"Durango Fir"

An. Inst. Biol., Mexico 13: 621 (1942)

Mexico: Durango and Chihuahua at 1600-2933 m.

11b-A. *durangensis* var. *coahuilensis* (Johnst.) Mart. "Coahuila Fir"

Pinac. Mexic. ed. 3. 139 (1963). = *A. coahuilensis* I.N. Johnst.,

Journ. Arn. Arb. 24: 332 (1943).

Mexico: Coahuila; N. Sierra Madre to 2270 m.

12- *A. fargesii* Franch.

"Farges Fir"

Journ. de Bot. 13: 256 (1899). = *A. fargesii* var. *sutchuensis*

Franch, l.c. (1899) sensu Cheng et Fu (1978).

China: N. Yunnan; N.W. Szechuan; N.W. Hupeh; S.W. Shensi; 1500-3900 m.

12b- *A. fargesii* var. *faxoniana* (Rehd. et Wils.) Liu "Faxon Fir"

Monogr. Gen. *Abies*. 151. t. 9b. 529 (1972) = *A. delavayi* var.

faxoniana (Rehd. et Wils.) Jacks. ex Chitt., Conif. Cult. 246.

f. 77 (1932) = *A. chayensis* Cheng et L.K. Fu, Acta Phytotax. Sin.

13(4): 82 (1975).

N.E. Burma; China: C. Kansu; N.W. Szechuan; Tibet, 2600-4000m.

13-A. *firma* Sieb. et Zucc.

"Momi Fir"

Fl. Jap. 2:15. t. 107 (1842) = *A. bifida* Sieb et Zucc.. l.c. 18. t. 109.

S. Japan: S. Honshu; Shikoku and Kyushu, 300-1600 m.

14-A. *fraseri* (Pursch.) Poir.

"Fraser Fir"

Lam., Encycl. Meth. Bot. Suppl. 5:35 (1817)

U.S.A.: S.W. Virginia; E. Tennessee; North Carolina: Alleghany Mts.,

1400-2100 m.

15- *A. grandis* (Dougl. ex D. Don) Lindl.

"Grand Fir"

Penny Cycl. 1:30 (1833) = *A. excelsior* Franco, Bol. Soc. Broter.

(Coimbra), ser. 2, 23: 162 (1949).

Canada: S.W. British Columbia to N.W. California, U.S.A., 427-1829 m.

16- *A. guatemalensis* Rehd.

"Guatemalen Fir"

Journ. Arn. Arb. 20(3): 285 (1939). = *A. guatemalensis* var. *jalis-*

cans Mart., An. Inst. Biol. Mex. . ed. 3. 129 (1963)

= *A. tacanensis* C.C. Lundell, Am. Midl. Nat. 23: 175 (1940).

S.E. Mexico to W. Guatemala, 1800-4083 m.

17- *A. hickeli* Flous et Gaussen

"Hickel Fir"

Bull. Soc. Hist. Nat. Toul. 44; 24, f. (1932) = *A. oaxacana*

Mart., An. Inst. Biol. Mexico 29: 39 (1949).

S. Mexico: Veracruz; Guerrero; Oaxaca; Chiapas, 1650-3000 m.

- 18- *A. holophylla* Maxim. "Manchurian Fir"
Mel. Biol. Acad. Petersb. 6:22 (1866)
U.S.S.R; China; Heilungkiang (Manchuria); N. Korea; 0-1500 m.
- 19- *A. homolepsis* Sieb. et Zucc. "Nikko Fir"
Fl. Jap. 2: 17. t. 108 (1842)= *A. homolepsis* var. *tomomi* (Bobb. et Atk.)
Rehd., Journ. Arn. Arb. 1: 53 (1919)= *A. homolepsis* var. *umbellata*
(Mayr.) Wils., Conif. Tax. Jap. 58 (1916).
Japan: Mt. Adsuma to Mt. Takakuma, 700-2200 m.
- 20- *A. kawakami* (Hay.) Ito "Kawakami Fir"
Encycl. Jap. 2: 167 (1909)= *A. mariesii* var. *kawakami* Hayata, Journ.
Coll. Sci. Tokyo 25(19): 223, f. 14 (1908).
Taiwan; Mount Morrison, 2400-3800 m.
- 21- *A. koreana* Wils. "Korean Fir"
Journ. Arn. Arb. 1: 888 (1920).
Korea: Chirisan, to 1000 m.
- 22- *A. lasiocarpa* (Hook.) Nutt. "Subalpine Fir"
No. Am. Sylva 3: 138 (1849) = *A. bifolia* Murr., Syn. Var. Conif. 29.
W. Canada; U.S.A.: S.E. Alaska to C. Utah, 2438-3658 m.
- 22b. *A. lasiocarpa* var. *arizonica* (Merr.) Lemm. "Corkbark Fir"
Bull. Sierra Club. 2: 167 (1898)= *A. arizonica* Merr., Proc. Biol.
Soc. Wash. 10: 116, f. 24-25 (1896).
U.S.A.: E. Arizona; Colorado; New Mexico.
- 23- *A. magnifica* A. Murr. "California Red Fir"
Proc. R. Hort. Soc. 3: 318, f. 25-33 (1863).
U.S.A.: S.W. Oregon; N. California to W. Nevada, 1829-2743 m.
- 24- *A. mariesii* Mast. "Maries Fir"
Gard. Chron. 12: 788, f. 17, 16, 129 (1979).
C. Japan: Honshu; Mt. Hakkoda, 1000-2900 m.
- 25- *A. nebrodensis* (Locaj.-Poj.) Mattei "Sicilian Fir"
Bull. Jard. Bot. Palermo 7: 64 (1908).
Italy: Sicily: Polizzo, Monte Cervo at 1400-2000 m.
- 26- *A. nephrolepis* (Trautv.) Maxim. "Eastern Siberian Fir"
Bull. Acad. Sci. St. Petersburg., ser. 3. 10: 486 (1866)= *A.*
sibirica var. *nephrolepis* Trautv. ex Maxim., Mem. Sav. Etr. Acad.
Sci. St. Petersburg. 9: 206 (1859)
N. China; U.S.S.R.: E. Siberia; Korea; 500-2000 m.
- 27- *A. nordmanniana* (Stev.) Spach. "Caucasian Fir"
Hist. Nat. Veg. Phan. 11: 418 (1842)
N.E. Turkey; W. Caucasus; southern U.S.S.R, 900-2200 m.

- 28- *A. numidica* De Lann. ex Carr. "Algerian Fir"
 Rev. Hort. 37: 106 (1866)
 Algeria: Constantine, Kabylie Range, 1800-2010 m.
- 29- *A. pindrow* (Lamb.) Royle "Pindrow Fir"
 Ill. Bot. Himal. 350. t. 86 (1836).
 Afghanistan; Pakistan; N.E. India; Nepal, 2000-3700 m. to S. Tibet, China.
 Synonymy: *A. pindrow* var. *brevifolia* Dallim. et Jacks., Handb. Conif.
 ed. 3. 158 (1961) = *A. pindrow* var. *intermedia* Henry ex Elwes
 et Henry, Tr. Gr. Brit. et Irel. 756 (1909).
- 30- *A. pinsapo* Boiss. "Spanish Fir"
 Bibl. Univ. Geneve, n.s. 13: 406 (1838).
 S. Spain: Malaga and Granada Provinces, 1000-2000 m.
- 30b- *A. pinsapo* var. *maroccana* (Trab.) Ceb. et Bol. "Moroccan Fir"
 Serv. For. Invest. Exp. 2:18 (1928) = *A. maroccana* Trab., Bull. Soc.
 Bot. France 53: 154 (1906).
 Morocco: S. Tetuan; W. Mount Rif, 1800 -2100 m.
- 30c- *A. pinsapo* var. *tazaotana* (Coz. ex H.d.Vill.) Pourt. "Tazaotan Fir"
 et Tour, Ann. Ecole Nat. Eaux For. 9. fasc. 1, 100(1954) = *A. tazaotana*
 Cozar ex Hug. del Vill., Types des Sols Afr. Nord. 1. 79 (1947).
 Morocco: Mount Tazaot at 1400-1700 m.
- 31- *A. procera* Rehd. "Noble Fir"
 Rhodora 42: 522 (1940) = *A. nobilis* auct. non Dietr., (Dougl.) Lindl.,
 Penny Encycl. 1:30 (1833).
 S.W. Canada: S. British Columbia to N.W. California, U.S.A., 61-2682 m.
- 32- *A. recurvata* Mast. "Min Fir"
 Journ. Linn. Soc. Bot. 37: 423 (1906).
 China: S. Kansu; W. Szechuan, Min Shan, 2300 -3600 m.
- 33- *A. religiosa* (H.B.K.) Schlecht. et Cham. "Sacred Fir"
 Linnea 5: 77 (1830) = *A. mexicana* Mart., Anal. Inst. Biol. Mexico 12:
 620 (1942)
 South and central Mexico to N. Guatemala at 1200-4100 m.
- 34- *A. sachalinensis* (Fr. Schm.) Mast. "Sakhalin Fir"
 Gard. Chron., n. ser. 12: 588, f. 97 (1879) = *A. sachalinensis* var.
nemorensis Mayr., Monogr. Abiet. Jap. Reich. 42. t.3, f.6 (1890).
 USSR: Okha to Kurile Islds.; Japan: Hokkaido, Kabetsu, to 1650 m.
- 34b- *A. sachalinensis* var. *mayriana* Miyabe et Kudo "Mayr Fir"
 Trans. Sapp. Nat. Hist. Soc. 7: 131 (1919)
 USSR: S. Sakhalin; S. Kuriles; N. Japan: Hokkaido.
- 35- *A. sibirica* Ledeb. "Siberian Fir"
 Fl. Alt. 4: 202 (1833).
 N.E. USSR: Siberia to Altai Mts.; N. China: Heilungkiang, 50-2000 m.
- 35b- *A. sibirica* var. *semenovii* (Fedtsch.) Liu "Semenov Fir"
 Monogr. Gen. Abies . 188 (1972).

USSR: Kazakhstan, W. Tien Shan, Fergana and Talass Ranges, 1350-2800 m.

- 36- *A. spectabilis* (D.Don) Spach "Himalayan Fir"
 Hist. Nat. Veg. Phan. 11: 422 (1842) = *A. spectabilis* var.
brevifolia Rehd., J. Arn. Arb. 1: 54 (1919) = *A. webbiana* (Wall.)
 Lindl., Penny Cyclop. 7 (1833)
 N.E. Afghanistan; N. India; W. Nepal; 1600 -4270 m.
- 36b- *A. spectabilis* var. *densa* (Griff.) Silba, comb. nova "Sikkim Fir"
 = *A. densa* Griff., Icon. Pl. Asiat. 371 (1851) et in Notul.
 Pl. Asiat. 4: 19 (1854).
 Sikkim: Chumbi Valley; Bhutan; China: S.E. Tibet; N.E. India: Assam ,
 2450-3800 m.
- 37- *A. squamata* Mast. "Flaky Fir"
 Gard. Chron. ser.3.39: 299, f. 121 (1906)
 China: Tibet; Tsinghai; W. Szechuan; N.W. Yunnan; S.W. Kansu, 3000-4700 m.
- 38- *A. veitchii* Lindley "Veitch Fir"
 Gard. Chron. 23 (1861)
 C. Japan: Honshu, 1500-2800 m.
- 38b- *A. veitchii* var. *sikokiana* (Nak.) Kus. ex Iw. et Kus. "Shikoku Fir"
 Conif. Jap. Illus. Adject. et Emend. 212 (1954)
 Japan: Shikoku Mountains, 800-1900 m.
- 39- *A. vejari* Mart. "Vejar Fir"
 An. Inst. Biol. Mexico 13: 629 (1942) = *A. vejari* var. *macrocarpa*
 Mart., An. Inst. Biol., Mexico 19.1. (1948).
 Mexico: Coahuila; Nuevo Leon and Tamaulipas, 2800-3300 m.
- 39b- *A. vejari* var. *mexicana* (Mart.) Liu "Mexican Fir"
 Monogr. Gen. *Abies* 261, 377 (1972) = *A. mexicana* Mart., Anal.
 Inst. Biol. Mexico. 13: 626 (1942)
 Mexico: N. Coahuila; Nuevo Leon; N.W. Tamaulipas, 2000-3000 m.

ACMOPYLE Pilg.

(Podocarpaceae)

Pflanzenr. 4. 5 (Heft 18): 117 (1903).

DeLaubenfels (1969) accepts two species of *Acropyle*.

- 1- *A. pancheri* (Brongn. et Gris.) Pilg. "New Caledonian Acropyle".
 Pflanzenr. l.c. (1903) = *A. alba* Buchh., Bull. Mus. Hist. Nat. Paris
 2 (21): 281 (1949)
 New Caledonia: local; type from Mount Mou; 200-1200 m.
- 2- *A. sahniiana* Buchh. et Gray "Fijian Acropyle"
 Journ. Arn. Arb. 28: 142 (1947)
 Fiji: Mount Vakarogasiu and Mount Koroyanitu; 800-1050 m.

ACTINOSTROBUS Miq. ex Lehm.

(Cupressaceae)

Pl. Preiss. 1: 644 (1845)

In 1984 I recieved seed from the Forestry Bureau of Como, Western Australia. Cotyledons of *A. acuminatus* seedlings are nearly twice as wide and half the length of those of *A. pyramidalis*. The taxon named *A. arenarius* has seeds and cotyledons identical to *A. pyramidalis*, also both taxa have female cones with overlapping scales.

- 1-*A. acuminatus* Parl. "Moore River Cypress-Pine"
 Ind. Sem. Hort. Florent. 25 (1862)
 W. Australia: between Moore and Murchison Rivers.
- 2-*A. pyramidalis* Miquel ex Lehm. "Kinge George's Cypress-Pine"
 Pl. Preiss. l.c. (1845)
 W. Australia: King George's Sound, Baxter to Swan River.
- 2b- *A. pyramidalis* var. *arenarius* (C. Gardn.) J. Silba, comb. nova
 "Bruce Rock Cypress-Pine"
 = *A. arenarius* C. Gardner, J. Royal Soc. W. Australia 47:54 (1964).
 W. Australia: Irwin and Avon Districts, Darling Range, Bruce Rock.

AGATHIS Salisb.

(Araucariaceae)

Trans. Linn. Soc. Bot. 8: 311. t.15 (1807)= *Dammara* Link,
 Enum. Pl. Hort. Berol. 2: 411 (1822).

The genus *Agathis* consists of 20 species (De Laubenfels, pers. comm. July 1984). Whitmore (1980) reviewed the genus *Agathis* in a recent monograph.

- 1- *A. atropurpurea* Hyland "Blue Kauri"
 Brunonia 1:109 (1978)
 Australia: N. Queensland; Cook District, Bellenden Ker Range, 900-1500 m.
- 2- *A. australis* (Lamb.) Steud. "New Zealand Kauri"
 Nomencl. Bot. ed. 2 (1): 34 (1841).
 New Zealand, northern peninsula of Northern Island.
- 3-*A. borneensis* Warburg "Bornean Kauri"
 Monsunia 1: 184, t.8d (1900)= *A. beccarii* Warb., l.c. (1900) =
A. latifolia Meijer Drees, Bull. Jard. Bot. Buitenzorg, ser.3, 16:
 459 (1940)= *A. rhomboidalis* Warb., Monsunia l.c. (1900).
 Malaysia: Malay; Sarawak. Indonesia: Sumatra; Borneo .
- 4-*A. celebica* (Koorders) Warb. "Celebes Kauri"
 Monsunia 1: 195 (1900) = *A. hami* Meijer Drees, Bull. Jard. Bot.
 Buitenz. ser.3,16: 462 (1940).
 Philippines: Palawan ; Indonesia: Celebes; Moluccas, 200-2000 m.
- 5-*A. corbassonii* De Laub. "Corbasson Kauri"
 Trav. Lab. For. Toul. 1,8 (5):2 (1969),

- New Caledonia: north and central areas, type near Me Aoui, 300-700 m.
- 6- *A. endertii* Meijer Drees "Endert Kauri"
 Bull. Jard. Bot. Buitenzorg, ser.3,16: 470 (1940)
 Indonesia: C. Borneo, sandstone regions, 220-1600 m.
- 7- *A. flavescens* Ridley "Malesian Kauri"
 Kew Bull. 332 (1914)= *A. dammara* subsp. *flavescens* (Ridl.) Whitm.,
 Pl. Syst. et Evol. 135:59 (1980).
 Malaysia: N. Malaya, Gunung Tahan and G. Rabong, 1200-1350 m.
- 8- *A. kinabaluensis* De Laub. "Kinabaulu Kauri"
 Blumea 25(2): 535, f.3 (1979)
 Malaysia: Sabah; Mt. Kinabaulu, Ranau, 1500-2400 m.
- 9- *A. labillardierii* Warb. "Western New Guinean Kauri"
 Monsunia 1: 183 (1900)
 New Guinea: Irian Jaya to N.W. Papua, 200-1700 m.
- 10- *A. lanceolata* Lindl. ex Warb. "Koghis Kauri"
 Monsunia 1: 186 (1900)
 S. New Caledonia, type near Mt. Koghis, 100-900 m.
- 11- *A. lenticula* De Laub. "Sabah Kauri"
 Blumea 25(2):537, f.4 (1979)
 Malaysia: Sabah; Mt. Kinabalu, Ranau, 1140-1680 m.
- 12- *A. macrophylla* (Lindl.) Mast. "Melanesian Kauri"
 J. Roy. Hort. Soc. 14: 197 (1892)= *A. obtusa* (Lindl.) Mast, J. Roy.
 Hort. Soc. 14: 270 (1892)= *A. vitiensis* (Seem.) Benth. et Hook f.,
 Gen. Pl. 3: 436 (1880)
 Solomon Islands; New Hebrides; Fiji, 200-900m .
- 13- *A. microstachya* J.F. Bailey et C.T. White "Atherton Kauri"
 Contrib. Queensl. Fl. Bot. Bull. 18: 13 (1916)
 Australia: N. Queensland, Cook District, coastal area, 500-700 m.
- 14- *A. montana* De Laub. "Panie Kauri"
 Trav. Lab. For. Toul. 1,8(5):2 (1969)
 N.E. New Caledonia: Mount Panie, 1000-1640 m.
- 15- *A. moorei* (Lindl.) Mast. "Moore Kauri"
 J. Roy. Hort. Soc. Lond. 14: 197 (1892)
 New Caledonia: Pembe to Thio; Dumbea to Prony, 200-1000 m.
- 16- *A. philippinensis* Warb. "Indonesian Kauri"
 Monsunia 1:185 (1900)= *A. dammara* (Lamb.) Rich., Conif. 83.t.19 (1826)
 as to description, type specimen is however *A. borneensis*.
 Philippines; Indonesia: Sumatra; Java; Borneo; Celebes; Moluccas; 450-
 2500 m.
- 17- *A. ovata* (Moore ex Veill.) Warb. "Scrub Kauri"
 Monsunia 1:185 (1900)= *A. hypoleuca* (Moore) Warb., l.c. (1900).
 S. New Caledonia: Mt. Humboldt to Mt. des Sources, 150-1000 m.

- 18- *A. orbicula* De Laub. "Sarawak Kauri"
 Blumea 25(2): 540, f.5 (1979)
 Malaysia: Sabah, Ulu Moyah; Sarawak: Bumbong Rumah, 450-1050 m.
- 19- *A. robusta* (C. Moore ex F. Muell.) F.M. Bailey "Smooth-bark Kauri"
 A Syn. Queensl. Fl. 498 (1883) = *A. palmerstonii* (F. Muell.) F.M. Bailey,
 Dept. Agric. Brisb. Bull. (Bot.) 9:17 (1891).
 Australia: Queensland: Cook, North Kennedy & Wide Bay Districts, 0-900 m.
- 20- *A. spathulata* De Laubenfels "Eastern New Guinean Kauri"
 Fl. Males. (1984-5) = *A. robusta* subsp. *nesophila* Whitmore, Pl. Syst.
 et Evol. 135: 64, f.6 (1980).
 E. New Guinea: Papua; Morobe District to 1524 m.

AMENTOTAXUS Pilg.

(Taxaceae)

Bot. Jahrb. 54: 41 (1916)

The genus *Amentotaxus* consists of two species (De Laubenfels, pers. comm. March 1984).

- 1- *A. argotaenia* (Hance) Pilg. "Chinese Flowering Yew"
 Bot. Jahrb. l.c. (1916) = *A. cathayensis* Li, J. Arn. Arb. 33:195 (1952).
 China: S.E. Tibet to N.W. Kiangsi, 300 -1100 m.
- 2- *A. formosana* Li "Formosan Flowering Yew"
 J. Arn. Arb. 33: 196 (1952) = *A. yunnanensis* Li, l.c. 197 (1952).
 N. Vietnam: Chapa ; China: S.W. Yunnan ; S. Taiwan: Taito, 700-1300 m.

ARAUCARIA Jussieu

(Araucariaceae)

Gen. Pl. 413 (1879)

The genus *Araucaria* consists of 19 species and one variety (De Laubenfels, pers. comm. March 1984).

- 1- *A. angustifolia* O. Kuntze "Parana Araucaria"
 Rev. Gen. Plant. 3: 375 (1893) = *A. brasiliensis* A. Rich., Dict. Class
 Hist. Nat. 1:512 (1822)
 S. Brazil: Santa Catarina, Canoinhas; N. Argentina ; Paraguay, 500-2300 m.
- 2- *A. araucana* (Molina) K. Koch "Monkey Puzzle Araucaria"
 Dendrol. 2(2):206 (1873) = *A. imbricata* Pavon, Mem. Acad. Med. Madr.
 1:109 (1797).
 S. Chile and S.W. Argentina, Tierra del Fuego.
- 3- *A. bernieri* Buchholz "Bernier Araucaria"
 Bull. Mus. Paris. ser.2,21: 280 (1949)
 New Caledonia: Poum, and from Canala to Plaine des Lacs, 0-700 m.
- 4- *A. bidwillii* Hook. "Bunya-Bunya Araucaria"
 Lond. J. Bot. 2: 503 (1843)
 Australia: S.E. Queensland, Cook District, Mount Bunya, 100-1100 m.

- 5- *A. biramulata* Buchholz "Biramule Araucaria"
Bull. Mus. Paris. ser.2,21: 279 (1949).
W. New Caledonia, type from Mois de Mai, 300-1050 m.
- 6- *A. columnaris* (Forst.) Hook. "Coral Reef Araucaria"
Bot. Mag. 78: 4635 (1852)= *A. cookii* R. Brown ex Endl., Syn. Conif. 188 (1847).
S. New Caledonia: Ouinne to Prony and Isle of Pines, 0-50 m.
- 7- *A. cunninghamii* Aiton ex D. Don "Australian Hoop Araucaria"
Lanbert, Pinus ed.2,3,t.79 (1837).
Australia: E. Queensland; New South Wales, Macleay River, 0-1000 m.
- 7b-*A. cunninghamii* var. *papuana* Laut. "New Guinean Hoop Araucaria"
Bot. Jahrb. 50: 51 (1913)= *A. beccari* Warb., Monsunia 1: 187 (1900).
New Guinea at 610 to 2400 m.
- 8- *A. heterophylla* (Salisb.) Franco "Norfolk Island Araucaria"
An. Inst. Super. Agron., Lisbon 19: 11 (1952)= *A. excelsa* (Lamb.) R. Br. ex Aiton, Hort. kew.ed.2.5: 412 (1813) in part, actually this name refers to *A. columnaris*.
Australia: Norfolk Island, tropical areas.
- 9- *A. humboldtensis* Buchholz "Humboldt Araucaria"
Bull. Mus. Paris. ser.2,21: 279 (1949).
S. New Caledonia: Mt. Humboldt; Mt. Mou and Mt. des Sources, 750-1500 m.
- 10- *A. hunsteinii* K. Schumm. et Hollr. "Hunstein Araucaria"
Fl. Kais. Wilh. Land. 11 (1899)= *A. klinkii* Lauterb. ex Engl., Bot. Jahrb. 1:48 (1913) = *A. schumanniana* Warb., Monsunia 1: 187 (1900).
N.E. New Guinea: Bulolo Valley, 600-2000 m.
- 11- *A. laubenfelsii* Corbasson "De Laubenfels Araucaria"
Adansonia, ser.2,8: 467 (1968).
S. New Caledonia: Mt. Mou; Mt. des Sources: Mt. Dzumac, 400-1400 m.
- 12- *A. luxurians* (Brong. et Griseb.) De Laub. "Coast Araucaria"
ex H. Gaussen, Gym. Act. et Foss., 2 (14):21,40,f.547, p.55 (1970).
S. New Caledonia: along the coast, type near Canala, 0-200 m.
- 13- *A. montana* Brong. et Griseb. "Mountain Araucaria"
Ann. Sc. Nat. ser.5,13: 358 (1871).
N. New Caledonia, type near Canala, 200-1400 m.
- 14- *A. muelleri* (Carr.) Brong. et Griseb. "Mueller Araucaria"
Ann. Sc. Nat. ser.5: 362 (1871).
S. New Caledonia: Mt. Koghis to Mt. des Sources, 150-1070 m.
- 15- *A. nemorosa* De Laub. "Port Boise Araucaria"
Trav. Lab. For. Toul. 1(5-8) art.5: 1 (1969).
S. New Caledonia: Port Boise, endangered, to 10 m. altitude.
- 16- *A. rulei* Muell. "Rule Araucaria"
Ess. Pl. Coll. Eug. Fitz. 18 (1860).
New Caledonia: central and southern areas, type near Presque de Bogota,

occurring at 150 to 1150 meters altitude.

- 17-A. *schmidii* De Laub. "Schmid Araucaria"
 Trav. Lab. For. Toul. 1,8(5): 1 (1969)
 N.E. New Caledonia: Mount Panie, 1500-1630 m. rare.
- 18-A. *scopulorum* De Laub. "Rock Araucaria"
 Trav. Lab. For. Toul. 1,8(5): 1 (1969)
 N.E. New Caledonia: Poum; Douthio; Cap Bocage, 0-300 m.
- 19- A. *subulata* Vieill. "Narrow-leaf Araucaria"
 Ann. Sci. Nat. Paris, ser.4,16:55 (1862)= A. *balansae* Brong. et
 Griseb., Ann. Sci. Nat. ser.5.13: 351 (1871).
 New Caledonia: Ignambi; Canala; Mt. Dzumac; Mt. des Sources, 320-1900 m.

ATHROTAXIS D. Don

(Taxodiaceae)

Trans. Linn. Soc. 18: 171 (1839)

DeLaubenfels (pers. comm., July 1983) suggests that *Athrotaxis laxifolia* raised from seed collected in Tasmania will bear seedlings that are not always true to type, suggesting it may be a hybrid between the other two taxa named below.

- 1- A. *cupressoides* D. Don "Little-leaf Athrotaxis"
 Trans. Linn. Soc. 1.c. 173 (1839)= A. *imbricata* Maule ex Gord.,
 Pinet., Suppl. 16 (1862).
 Australia: W. Tasmania; Launceston, Lake Saint Clair.
- 2-A. x *laxifolia* Hook. "Yellow-twig Athrotaxis"
 Ic. Pl. t.573 (1843)= A. *doniana* Henk. et Hochst., Syn. Naderh.
 221 (1865).
 Australia: W. Tasmania, on mountain summits.
- 3-A. *selaginoides* D. Don "Longleaf Athrotaxis"
 Trans. Linn. Soc. 18: 172 (1839)= A. *alpina* Van Houtte ex Gord.,
 Pinet. 31 (1858).
 Australia: W. Tasmania; Launceston, Hartz Mts., 914-1219 m.

AUSTROTAXUS Compton

(Taxaceae)

J. Linn. Soc. 45: 427, t.26 (1922).

Austrotaxus is a monotypic genus (De Laubenfels, 1974).

- 1- A. *spicata* Compton "New Caledonian Flowering
 J. Linn. Soc. 1.c. (1922) Yew "
 New Caledonia: northeast and central areas, type near Ignambi,
 500-1350 m.

CALLITRIS Vent.

[Cupressaceae]

Dec. Gen. Nov. 10 (1808)

Dallimore and Jackson (1966) accepted 14 species of *Callitris*. Other taxa accepted by Garden (1956) in her monograph are treated as varieties here.

- 1- *C. baileyi* C.T. White "Bailey Cypress-Pine"
 Proc. Linn. Soc. N.S.W. 48:449 (1923)
 Australia: S.E. Queensland; type near Benarkin; N.E. New South Wales, Tabulam.
- 2- *C. canescens* (Parl.) S.T. Blake "Kellerberrin Cypress-Pine"
 Proc. R. Soc. Qld. 70: 39 (1959) = *C. morrisonii* R.T. Bak., Proc. Linn. Soc. N.S.W. 31: 717 (1907).
 Australia: S.E. Western Australia, type near Kellerberrin to S. South Australia.
- 3- *C. columellaris* F. Muell. "Richmond River Cypress-Pine"
 Fragm. Phyt. Aust. 5: 198 (1866) = *C. arenosa* A. Cunn. ex R.T. Bak. et H.G. Sm., Pin. Austral. 157 (1910).
 Australia: S.E. Queensland, coastal plains; N.E. New South Wales, type near Richmond River, to 255 m.
- 3b- *C. columellaris* var. *campestris* Silba, var. nova. "White Cypress-Pine"
 Synonymy: *C. glauca* R. Br. ex R.T. Bak. et H.G. Sm., Proc. Linn. Soc. N.S.W. 42: 146 (1908), nom. illegit. = *C. hugeli* auct. non Franco, Garden in Contrib. N.S.W. Nat. Herb. 2(5): 368 (1956), nomen confusum.
 Arbor vel frutex, fastigiata senectute expansa; folia glauca, 1-3 mm. longa, acuta; flores masculi 5 mm. longa; galbuli ad 25 mm., globosi, squamis 6.
 Holotype: Baker 118, Nov. 1902, Grangie, N. Boualilen, New South Wales, Australia (Harvard-A).
 Australia: all states, common in New South Wales.
- 3c- *C. columellaris* var. *intratropica* (R.T. Bak. et H.G. Sm.) Silba, comb. nova. "Arnhem Cypress-Pine"
 Synonymy: *C. intratropica* R.T. Bak. et H.G. Sm., Pines of Austral. 172 (1910).
 Australia: N.E. Western Australia; N. Northern Territory, Arnhem's Land (type); N.W. Queensland.
- 4- *C. drummondii* (Parl.) F. Muell. "Drummond Cypress-Pine"
 Census. 109 (1882).
 Australia: S. Western Australia, between Albany and Esperance.
- 5- *C. endlicheri* (Parl.) J. Garden "Endlicher Cypress-Pine"
 Contrib. N.S.W. Natn. Herb. 2(5): 388 (1956) = *C. calcarata* (A. Cunn. ex Mirb.) F. Muell., Census. 109 (1882).
 Australia: S.E. Queensland; E. New South Wales; N.E. Victoria, type from Futter's Range.

- 6- *C. macleayana* (F. Muell.) F. Muell. "Macleay Cypress-Pine"
Rep. Burdek. Exped. 17 (1860). = *C. parlatorei* F. Muell. ex Seem.,
J. Bot. 4: 267 (1866).
Australia: S.E. Queensland, Kuranda to Port Macquarie (type), N.E. New
South Wales.
- 7- *C. monticola* J. Garden "Wallangarra Cypress-Pine"
Contr. N.S.W. Natn. Herb. 2(5): 385 (1956).
Australia: S.E. Queensland, Wallangarra; N.E. New South Wales, S. Glen Innes.
- 8- *C. muelleri* (Parl.) F. Muell. "Mueller Cypress-Pine"
Census. 109 (1882).
Australia: S.E. New South Wales, type near South Head.
- 9- *C. neocaledonica* Dummer "Humboldt Cypress-Pine"
J. Bot. 52:239 (1914) = *C. sulcata* var. *alpina* R.H. Compton, J. Linn.
Soc. 45: 432 (1922).
S. New Caledonia: Mt. Humboldt to Mount des Sources, 950-1550 m.
- 10- *C. oblonga* A. et L.C. Rich. "Tasmanian Cypress-Pine"
Conif. 49. t.18, no.2 (1826) = *C. fructicosa* R. Br. ex A. et L.C. Rich,
Conif. 49 (1825) = *C. gunnii* Hook. f. ex Hook, Lond. J. Bot. 4: 147
(1845).
Australia: N.E. Tasmania; South Esk.
- 11- *C. preissii* Miq. ex Lehm. "Preiss Cypress-Pine"
Pl. Preiss. 1: 643 (1845) = *C. robusta* (A. Cunn. ex Parl.) F. M.
Bail., Qld. Fl. 5: 1496 (1902).
Australia: S.W. Western Australia to E. New South Wales, 150-400 m.
- 11b. *C. preissii* var. *murrayensis* (J. Gard.) Silba, comb. nova.
"Wentworth Cypress-Pine"
Synonymy: *C. preissii* subsp. *murrayensis* J. Garden, Contrib.
N.S.W. Natn. Herb. 2(5): 373 (1956). = *C. propinqua* R. Br. ex R.T.
Bak. et H.G. Sm., Pines of Austral. 112 (1910).
Australia: S. New South Wales, Wentworth to S. South Australia.
- 11c. *C. preissii* var. *verrucosa* (A. Cunn. ex Endl.) Silba, comb. nova.
"Knobcone Cypress-Pine"
Synonymy: *Frenela verrucosa* A. Cunn. ex Endl., Syn. Conif. 37
(1847) = *Callitris verrucosa* (A. Cunn. ex Endl.) F. Muell., Census
109 (1882)
Australia: S. Western Australia to New South Wales, Lachlan River.
- 12- *C. rhomboidea* (R. Br.) A. et L.C. Rich. "Oyster-Bay Cypress-Pine"
Conif. 47.t.18 .no.1 (1826) = *C. cupressiformis* D. Don ex Loud.,
Hort. Brit. 490 (1830) = *C. tasmanica* (Benth.) R.T. Bak. et H.G. Sm.,
Pines of Austral. 233 (1910).
Australia: S.E. Queensland to S. South Australia.
- 13- *C. roei* (Endl.) F. Muell. "Roe Cypress-Pine"
Census. 109 (1882)
Australia: S.W. Western Australia, Collie to Esperance.

- 14- *C. sulcata* (Parl.) Schlecht. ex Engl. "Camboui Cypress-Pine"
 Bot. Jahrb. 39: 16 (1907) = *C. balansae* (Brongn. et Gris.) Schlecht.
 ex Engl., Bot. Jahrb. 39: 16 (1907).
 S. New Caledonia: Camboui to Tontouta to Dumbea, 15-300 m.

CALOCEDRUS Kurz.

(Cupressaceae)

J. Bot. 2: 196 (June 1873)

Calocedrus contains three species (De Laubenfels, pers. comm., March 1984). *Calocedrus* is distinct from *Libocedrus* in its more flattened branchlets which are more like *Thuja*. *Calocedrus* has seeds with one long wing projecting backwards, whereas *Libocedrus* has seeds with two uneven wings on both sides of the nut.

- 1- *C. decurrens* (Torr.) Florin "California Calocedar"
 Taxon 5: 192 (1956) = *Libocedrus decurrens* Torr., Smithsn. Inst.
 Contrib. Knowl. 5(1): 7, pl.3 (1853)
 U.S.A.: W. Oregon to N. Baja California, Mexico, 366-2134 m.
- 2- *C. formosana* (Florin) Florin "Formosan Calocedar"
 Taxon 5(8): 192 (1956) = *C. macrolepis* var. *formosana* (Florin) Cheng
 et L.K. Fu, Fl. Reip. Pop. Sin. 7: 327 (1978) = *Libocedrus*
formosana Florin, Svensk. Bot. Tidskr. 24: 126, f.2, t.2 (1930)
 N. Taiwan, occurring at 300 to 1900 m. altitude.
- 3- *C. macrolepis* Kurz. "Chinese Calocedar"
 J. Bot. 2: 196, t.133, f.3 (1873) = *Libocedrus macrolepis* (Kurs) Benth.
 et Hook. f., Gen. Pl. 3: 426 (1880).
 N.E. Burma; China: S. Yunnan; Hainan, 1000-2000 m.

CEDRUS Link

(Pinaceae)

Linnaea 15: 537 (1841)

Cedrus consists of 2 species, with 2 geographic varieties (De Laubenfels, pers. comm., March 1984).

- 1- *C. deodara* (Roxb. ex Lamb.) G. Don "Deodar Cedar"
 ex Loud., Hort. Brit. ed. 1. 388. no.23637 (1830); Carr., Tr.
 Conif. ed.2.267 (1867) = *C. libani* var. *deodara* (Roxb.) Hook. f.,
 Himal. Journ. 1: 257 (1854).
 Afghanistan; N. West Pakistan; N. India: Garhwal; Nepal, 1676-3048 m.
- 2- *C. libani* A. Rich "Cedar of Lebanon"
 Dict. Class. Hist. Nat. 3: 299 (1823) = *C. libani* var. *stenocoma*
 (Schwartz) Davis, J. Roy. Hort. Soc. 74: 113 (1949).
 Turkey : Anatolia; Syria; Lebanon, 1311-3048 m.

- 2b- *C. libani* var. *atlantica* (Endl.) Hook. "Atlas Cedar"
 Nat. Hist. Rev. 15 (1862)= *C. atlantica* (Endl.) Carr., Tr. Conif.
 2:374 (1867).

Morocco; Algeria: Atlas Mountains, 1372-2195 m.

- 2c- *C. libani* var. *brevifolia* Hook f. "Cyprian Cedar"
 J. Bot. 38: 31 (1880)= *C. brevifolia* (Hook. f.) Henry ex Elwes et
 Henry, Tr. Grt. Brit. et Irel. 3:467 (1908).

Cyprus: Paphos Main Forest, 914-1524 m.

CEPHALOTAXUS Sieb. et Zucc. (Cephalotaxaceae)

ex Endl., Gen. Suppl. 2: 27 (1842).

Four species of *Cephalotaxus* are accepted here. The genus had not been critically reviewed previous to this manuscript, although Hu(1964) reduced a few taxa to synonymy, other taxa accepted by Cheng et Fu (1978) seem to be based on variations in leaf shape and cone size only.

The cotyledons of *Cephalotaxus* are morphologically the same as the *Taxaceae*. In *Cephalotaxus* the reproductive structure resembles a cone-like assemblage of the paired ovules like those of *Torreya* and the leaf phyllotaxy is the same unique arrangement of *Torreya*. Hence, I am including *Cephalotaxus* within the order *Taxales*.

- 1- *C. fortunei* Hook. f. "Chinese Plum-Yew"
 Curtis's Bot. Mag. 76:t.4499 (1850) = *C. fortunei* var. *alpina* Li,
 Lloydia 16(3): 164 (1953)= *C. fortunei* var. *concolor* Franch., J. de
 Bot. 13: 265 (1899)= *C. lanceolata* K.M. Feng, Acta Phytotax. Sin. 13
 (4): 86, pl.50, illus. 1. (1975)

N. Burma; China: Yunnan to Shensi to Chekiang, 200-3000 m.

- 2- *C. harringtonia* (Knight ex Forbes) K. Koch. "Harrington Plum-Yew"
 Dendr. 2(2): 102 (1873)= *C. griffithii* Hook. f., Fl. Brit. Ind.
 5: 648 (1888)= *C. wilsoniana* Hayata, Ic. Pl. Formos. 4: 22 (1914)
 N.E. India; N. Burma; N. Thailand; Malaysia: Penang; Cambodia; Laos;
 Vietnam: Annam; Taiwan to 2700 m.

- 2b. *C. harringtonia* var. *drupacea* (Sieb et Zucc.) Koidz. "Japanese
 Plum-Yew"
 Bot. Mag. Tokyo 44: 98 (1930)= *C. hainanensis* Li, Lloydia 16(3): 164
 (1953)= *C. koreana* Nak., Bot. Mag. Tokyo 44: 510 (1930)= *C. sinensis*
 (Rehd. ex Wils.) Li, Lloydia 16(3): 162 (1953)= *C. sinensis* var.
latifolia Cheng et L.K. Fu, Acta Phytotax. Sin. 13(4): 86, pl. 50,
 illus. 2-3 (1975).

China: Tibet to Hopeh; Korea; Japan, 600-2200 m.

3. *C. mannii* Hook.f. ex Hook. "Mann Plum-Yew"
 Icon. Pl. 14,t.1523 (1886)
 N.E. India: Assam; N. Burma; China: Yunnan, 1500-3000 m.

- 4- *C. oliveri* Mast. "Oliver Plum-Yew"
 Bull. Herb. Boiss. 6:270 (1898).
 China: Yunnan to Hupeh, 300-1800 m.

CHAMAECYPARIS Spach.

(Cupressaceae)

Hist. Nat. Veg. Phan. 11:239 (1842)

Gausson (1968) recognized 8 species of *Chamaecyparis*, one of which was reduced to synonymy by Little(1979).

- 1- *C. formosensis* Matsum. "Formosan Chamaecyparis"
 Bot. Mag. Tokyo. 15: 137 (1901).
 Taiwan: Mount Morrison, 1000-3048 m.
- 2- *C. funebris* (Endl.) Franco "Chinese Weeping Chamaecyparis"
 Agros 24: 93 (1941)= *Cupressus funebris* Endl., Syn. Conif. 58 (1847).
 C. China: Anwhei to Yunnan; Yangste River drainage, 1100-2000 m.
- 3- *C. lawsoniana* (A. Murr.) Parl. "Lawson Chamaecyparis"
 A. DC., Prodr. 16(2): 464 (1868).
 U.S.A.: S.W. Oregon, coastal plain to N.W. California, Mt. Shasta, to 1524 m.
- 4- *C. nootkatensis* (D. Don) Spach. "Nootka Chamaecyparis"
 Hist. Nat. Veg. Phaener. 11: 333 (1842).
 W. Canada; U.S.A.: S. Alaska to N.W. California, 610-2134 m.
- 5- *C. obtusa* (Sieb. et Zucc.) Endl. "Japanese Hinoki Chamaecyparis"
 Synop. Conif. 63 (1847).
 Japan: Hondo to Yaku Island, 400-2000 m.
- 5b. *C. obtusa* var. *formosana* (Hayata) Rehd. ex Bail.
 "Formosan Hinoki Chamaecyparis"
 Stand. Cycl. Hort. 2:731 (1914)= *C. taiwanensis* Matsum. et Suzuk.,
 Sylva 4: 57, t.1, B.3-4, t.2, B.54 (1933).
 Taiwan: north and central areas, 1300- 2800 m.
- 6- *C. pisifera* (Sieb. et Zucc.) Endl. "Sawara Chamaecyparis"
 Synop. Conif. 64 (1847).
 Japan: S. Hondo and C. Kyushu to 2400 m.
- 7- *C. thyoides* (L.) B.S.P. "White Chamaecyparis"
 Prel. Cat. Anth. Pter. N.Y. 71 (1888)= *C. henryae* Li, Bull. Morriss
 Arbor. 13: 43, f.34-38 (1962).
 E. United States: C. Maine to N. Florida, to 30 m. altitude.

CRYPTOMERIA D. Don

(Taxodiaceae)

Trans. Linn. Soc. Lond. 18: 166 (1841).

Dallimore and Jackson (1966) recognized one species and one variety .

- 1- *C. japonica* (Linn. f.) D. Don "Japanese Cryptomeria"
 Trans. Linn. Soc. Lond. 18: 167, t. 13, f. 1 (1841).
 Japan: Nagasaki and southern mountainous areas, 150-367 m.
- 1b. *C. japonica* var. *sinensis* Sieb. ex Sieb et Zucc. "Chinese Cryptomeria"
 Fl. Jap. 2: 52 (1844) = *C. fortunei* Hooibr. ex Otto et Dietr.,
 Allg. Gartenzeit. 21: 234 (1853).
 China: Anhwei to Yunnan, 900-2900 m.

CUNNINGHAMIA R. Br. ex Rich. (Taxodiaceae)

De Conif. 149 (1826).

Cheng et Fu (1978) recognize two species. The description of a newly named taxon does not seem to differ in vegetative characteristics from *C. lanceolata*.

According to De Laubenfels (pers. comm., March 1984) many plants cultivated in the eastern United States as *C. lanceolata* are actually *C. konishii*. *Cunninghamia* seedlings take many years to develop their adult foliage and many cultivated trees in the eastern United States are still in a juvenile stage. Nevertheless, herbarium samples of wild plants indicates that adult *C. lanceolata* has short, soft leaves without stomata; whereas *C. konishii* has leaves with two bands of stomata and the foliage is quite stiff.

- 1- *C. konishii* Hayata "Formosan Cunninghamia"
 Gard. Chron. ser. 3.43: 194 (1908) = *C. lanceolata* var. *konishii* (Hay.)
 Fujita, Trans. Nat. Hist. Soc. Formos. 22: 49, 476 (1932).
 Taiwan: Mount Randai, 1300-2000 m.
- 2- *C. lanceolata* (Lamb.) Hook. f. "Chinese Cunninghamia"
 Curtis's Bot. Mag. 54. t. 2743 (1827) = *C. unicanaliculata* Wang et Liu,
 Acta Phytotax. Sin. 20(2): 230 (1982), type from Dechang, Szechuan.
 China: E. Yunnan to Chekiang, 700-2500 m.

x CUPRESSOCYPARIS Dallimore (Cupressaceae)

Hand-list Conif., Roy. Bot. Gard., Kew.
 ed. 4.: 37 (1938)

Mitchell (1970) recognized three hybrids of *Cupressocyparis*.

- 1- *C. x leylandii* (A.B. Jacks. et Dallim.) Dallim. "Leyland Cupressocyparis"
 Hand-list Conif. 1.c. (1938).
 An artificial hybrid of *Chamaecyparis nootkatensis* and *Cupressus macrocarpa* raised in England.

- 2- *C. x notabilis* A. F. Mitchell "Noble Cupressocyparis"
 J. Roy. Hort. Soc. Lond. 95: 453 (1970).
 An artificial hybrid of *Chamaecyparis nootkatensis* and *Cupressus arizonica* var. *glabra* raised in England.
- 3- *C. x ovensii* A. F. Mitchell "Ovens Cupressocyparis"
 J. Roy. Hort. Soc. Lond. 95: 454 (1970).
 An artificial hybrid of *Chamaecyparis nootkatensis* and *Cupressus lusitanica* raised in England.

CUPRESSUS L.

(Cupressaceae)

Gen. Pl. 294 (1737).

Silba (1983) recognizes 13 species of *Cupressus*. De Laubenfels (pers. comm., March 1984) has suggested a lesser number of infraspecific taxa be recognized.

- 1- *C. arizonica* Greene "Rough-bark Arizona Cypress"
 Bull. Torrey Club. 9: 64 (1882).
 U.S.A.: S.W. Arizona to S.W. Texas to Durango, Mexico, 900-1830 m.
- 1b. *C. arizonica* var. *glabra* (Sudw.) Little "Smooth-bark Arizona Cypress"
 Madrono 18: 162 (1966) = *C. arizonica* var. *montana* (Wiggins) Little, l.c. 163 (1966) = *C. arizonica* var. *stephensonii* (Wolf) Little, l.c. 164 (1966) = *C. arizonica* var. *revealiana* Silba, Phytologia 49(4): 393 (1981).
 U.S.A.: C. Arizona; S. California; Mexico: N. Baja California, 450-2825 m.
- 1c. *C. arizonica* var. *nevadensis* (Abrams) Little "Piute Cypress"
 Madrono 18: 164 (1966).
 U.S.A.: California: Kern and Tulare Counties at 1524-1830 m.
 A distinctly glandular taxon, its foliage leaves a reddish dot of resin on the dorsal side of the leaf when dried.
- 2- *C. bakeri* Jeps. "Baker Cypress"
 Fl. Calif. 1: 61 (1909). = *C. bakeri* subsp. *matthewsii* C. B. Wolf in Aliso 1: 83 (1948).
 U.S.A.: S.W. Oregon to Plumas County, E. California, 1160-2100 m.
- 3- *C. chengiana* Hu "Cheng Cypress"
 Taiwania 10: 57 (1964) = *C. fallax* Franco, Portug. Acta Biol. ser.b. 9: 190 (1969) = *C. jiangeensis* Zhao, Acta Phytotax. Sin. 18: 210 (1980) = *Chamaecyparis chengiana* (Hu) Gaussen, Trav. Lab. For. Toul. Tome 2. sect. 1. vol. 1. pt.2-2, fasc. 10.ch. 13: 58, 70 (1968) nom. illegit. basionym not fully cited.
 China: N.W. Szechuan; S.E. Kansu: Min River drainage, 1300-3000 m.
- 4- *C. duclouxiana* Hickel ex Camus "Ducloux Cypress"
 Les Cypres. 91 (1914).
 China: S.E. Tibet, Pome; N.W. Yunnan, 1950-2100 m.
- 5- *C. gigantea* Cheng et L.K. Fu "Tsangpo River Cypress"
 Acta Phytotax. Sin. 13: 85, pl.16 (1975).

China: S.E. Tibet; Tsangpo River, Linchi westwards, 3000-3400 m.

- 6- *C. goveniana* Gord. "Gowen Cypress"
 Journ. Hort. Soc. Lond. 4: 295 (1849) = *C. goveniana* var. *pigmaea* Lemm.,
 Handb. W.-Amer. Cone-Bearers. ed.3. 77 (1895).
 U.S.A.: California: Mendocino, Sonoma and Monterey Counties, 60-300 m.
- 6b- *C. goveniana* var. *abramsiana* (Wolf) Little "Santa Cruz Cypress"
 Phytologia 20: 435 (1970) = *C. abramsiana* Wolf, Aliso 1: 216 (1948).
 U.S.A.: California, Santa Cruz and San Mateo Counties, 487-762 m.
- 7- *C. guadalupensis* S. Wats. "Guadalupe Cypress"
 Proc. Am. Acad. 14: 300 (1879)
 Mexico: Guadalupe Island to 900 m.
- 7b. *C. guadalupensis* var. *forbesii* (Jeps.) Little "Forbes Cypress"
 Phytologia 20: 435 (1970) = *C. forbesii* Jeps., Madrono 1: 75 (1922).
 U.S.A.: S.W. California; Mexico: N. Baja California, 460-1524 m.
- 8- *C. lusitanica* Mill. "Mexican Cypress"
 Gard. Dict. ed.8,n.3 (1768) = *C. corneyana* (Knight et Perry) Carr., Tr.
 Conif. 128 (1855) = *C. lindleyi* Klotzsch ex Endl., Syn. Conif. 59 (1847).
 N.W. Mexico to S.W. Guatemala to N.W. Honduras, 490-1065 m.
- 8b- *C. lusitanica* var. *bentharii* (Endl.) Carr. "Bentham Cypress"
 Tr. Conif. ed.2. 155 (1867) = *C. bentharii* Endl., Syn. Conif. 59 (1847).
 Mexico: Hidalgo; Puebla and Vera Cruz, 2100-2300 m.
- 9- *C. macnabiana* Murr. "Macnab Cypress"
 Edin. New Phil. Journ. 2(1): 293, pl.11 (1855).
 U.S.A.: N. California; N. Coast Ranges and N. Sierra Nevada, 300-790 m.
- 10- *C. macrocarpa* Hartw. ex Gord. "Monterey Cypress"
 J. Hort. Soc. Lond. 2: 187 (1847).
 U.S.A.: California; Monterey County, Point Cypress, altitude is at sea level.
- 11- *C. sargentii* Jeps. "Sargent Cypress"
 Fl. Calif. 1:61 (1909).
 U.S.A.: California; Coast Ranges, 60-1120 m.
- 12- *C. sempervirens* L. "Mediterranean Cypress"
 Sp. Pl. 1002 (1753) = *C. horizontalis* Mill., Gard. Dict. ed.8,n.2 (1768)
 = *C. sempervirens* var. *numidica* Trab. ex Barr., Bull. Soc. Hort.
 Tunisia et Rev. Hort. Algerie. 17: 309 (1913).
 C. Tunisia; N.W. Libya; Greece; Cyprus; N. Iran; Turkey; Syria;
 Lebanon and Jordan at 500-1800 m.
 Silba (1983) referred to typical *Cupressus sempervirens* as a tree with horizontally spreading branches forming an oval crown; the columnar form is not known wild and should be regarded as *C. sempervirens* cv. '*stricta*'.
- 12b- *C. sempervirens* var. *atlantica* (Gaussen) Silba "Moroccan Cypress"
 Phytologia 49(4): 398 (1981) = *C. atlantica* Gaussen, Le Monde des Plantes 45:55 (1950). Morocco: Oued N'Fis, 1000-2000 m.

- 12c- *C. sempervirens* var. *dupreziana* (Camus) Silba "Tamrit Cypress"
Phytologia 49(4): 398 (1981)= *C. dupreziana* Camus, Bull. Mus. Hist.
Nat. Paris. 32: 101 (1926).
S.E. Algeria: Tassili Plateau, Tamrit, 1600-1900 m.
- 13- *C. torulosa* D. Don ex Lamb. "Himalayan Cypress"
Descr. Gen. Pinus, ed. 1(2): 18 (1824).
N.E. India: Chamba to N.W. Nepal, 1500-3300 m.
- 13b-*C. torulosa* var. *cashmeriana* (Carr.) Kent "Kashmir Cypress"
Veitch., Man. Conif. 2: 284 (1900)= *C. cashmeriana* Royle ex Carr.,
Tr. Conif. ed.2: 161 (1867)= *C. corneyana* auct. non Carr., Franco
in Portug. Acta Biol. ser.B.9: 192 (1969).
Sikkim; Bhutan; China: S.E. Tibet; N.E. India: Balipara Frontier,
2500-3000 m.

DACRYCARPUS (Endl.) De Laub. (Podocarpaceae)

Journ, Arn. Arb. 50: 315 (1969)

The foliage of *Dacrycarpus* is more similar to *Dacrydium* than to *Podocarpus* (De Laubenfels, 1969). *Dacrycarpus* differs in its flattened branchlets and by its female cones having a bract united with the seed. The female cone in some species has a protruding umbo on the receptacle.

- 1- *D. cinctus* (Pilg.) De Laub. "Busu River Dacryberry"
J. Arn. Arb. 50: 332 (1969)= *Podocarpus cinctus* Pilg., Bot.
Jahrb. 69: 253 (1938).
Indonesia: Celebes; New Guinea to Papua, 900-3600m.
- 2- *D. compactus* (Wassch.) De Laub. "Albert-Edward Dacryberry"
J. Arn. Arb. 50: 336 (1969)= *Podocarpus compactus* Wassch., Blumea
4: 411 (1941).
New Guinea to Papua at 3200-3900 m.
- 3- *D. cumingii* (Parl.) De Laub. "Cuming Dacryberry"
J. Arn. Arb. 50: 329 (1969)= *Podocarpus cumingii* Parl., DC. Prodr.
16(2): 521 (1868).
Philippines: Luzon; Indonesia: Sumatra and Borneo, 1860-3000m.
- 4- *D. dacrydioides* (Rich.) De Laub. "New Zealand Dacryberry"
J. Arn. Arb. 50: 337 (1969)= *Podocarpus dacrydioides* Rich., Ess. Fl.
Nouv. Zel. 358. t.39 (1832).
New Zealand: North Island, to 700 m.
- 5- *D. expansus* De Laub. "Yobobos Dacryberry"
J. Arn. Arb. 50: 334 (1969).
New Guinea: Irian Jaya to Papua, 2600-26070 m.
- 6- *D. imbricatus* (Blume) De Laub. "Java Dacryberry"
J. Arn. Arb. 50: 317 (1969)= *Podocarpus imbricatus* Blume, Enum. Pl.
Javae 1: 89 (1827).
Malaysia: Malaya; Indonesia: Java and Lesser Sunda Islands.

- 6b- *D. imbricatus* var. *curvulus* (Miq.) De Laub. "Sumatran Dacryberry"
 J. Arn. Arb. 50: 326 (1969)= *Podocarpus imbricatus* var. *curvula*
 (Miq.) Wassch., Blumea 4: 398 (1941).
 Indonesia: Sumatra and Java .
- 6c- *D. imbricatus* var. *patulus* De Laub. "Common Dacryberry"
 J. Arn. Arb. 50: 320 (1969)= *Podocarpus kawaii* Hayata, Bull. Econ.
 Indochine 20: 439 (1917).
 Indochina; Malaysia; Philippines; Indonesia; Melanesia; Fiji.
- 6d- *D. imbricatus* var. *robustus* De Laub. "Wilhelm Dacryberry"
 J. Arn. Arb. 50: 323 (1969)= *Podocarpus papuanus* Ridley, Trans.
 Linn. Soc. Lond. 2.9: 158 (1916).
 Malaysia: Sarawak; Sabah; Philippines; New Guinea.
- 7- *D. kinabaluensis* (Wassch.) De Laub. "Kinabaulu Dacryberry"
 J. Arn. Arb. 50: 330 (1969)= *Podocarpus imbricatus* var. *kinabaulen-*
sis Wassch., Blumea 4: 400 (1940).
 Malaysia: Sabah; Mount Kinabaulu at 2700-4000 m.
- 8- *D. steupii* (Wassch.) De Laub. "Steup Dacryberry"
 J. Arn. Arb. 50: 328 (1969)= *Podocarpus steupii* Wassch., Blumea
 4: 405 (1941).
 Indonesia: E. Borneo; Celebes; New Guinea, 780-2350 m.
- 9- *D. vieillardii* (Parl.) De Laub. "Vieillard Dacryberry"
 J. Arn. Arb. 50: 326 (1969)= *Podocarpus vieillardii* Parl, DC. Prodr.
 16(2): 521 (1868).
 S. New Caledonia: type near Païta, 200-800m.

DACRYDIUM Soland. ex Forst.

(Podocarpaceae)

De Pl. Escul. Ins. Ocean. Austral. Comm. Bot. 80 (1786)
 = *Lepidothamnus* Philippi, Linnea 30: 730 (1860)
 = *Lagarostrobos* Quinn, Austr. J. Bot. 30: 316 (1982).

De Laubenfels (pers. comm., July 1983) recognizes 25 species of *Dacrydium*.
 De Laubenfels (Fl. Males. 1984-5) rejected the genera *Lagarostrobos* and
Lepidothamnus recognized by Quinn (1982), which appear to be based on
 unreliable variable characteristics.

1. *D. araucarioides* Brong. et Griseb. "Araucaria-leaf Dacrydium"
 Ann. Sci. Nat. Paris. ser.5(6): 244 (1866)= *D. arthrotaxoides* Carr.,
 Tr. Conif. 2: 697 (1867).
 New Caledonia: eastern and southern coasts, type near Canala, 150-1000 m.
- 2- *D. balansae* Brong. et Griseb. "Balansa Dacrydium"
 Bull. Soc. Bot. France 16: 328 (1869).
 New Caledonia: local, type near Bourail, 10-900 m.
- 3- *D. beccarii* Parl. "Beccar Dacrydium"
 DC. Prodr. 16(2): 494 (1868)= *D. beccarii* var. *subelatum* Corn.,

- Gard. Bull. Str. Settl. 10: 244 (1939).
Malaysia; Philippines; Indonesia; New Guinea to Solomon Islands.
- 4- *D. colensoi* Hook. "Colenso Dacrydium"
Ic. Pl. 6: t.548 (1843)= *Lagarostrobus colensoi* (Hook.) Quinn,
Austr. J. Bot. 30: 317 (1982)
New Zealand: W. North Island and in Westland, South Island, 1219-1830 m.
- 5- *D. comosum* Corner "Malayan Dacrydium"
Gard. Bull. Str. Settlm. 10: 244 (1939)
Malaysia: Malaya; Pahang and Selangor, 1200-2000 m.
- 6- *D. cupressinum* Sol. ex Forst. "Rimu Dacrydium"
De Pl. Escul. 80 (1786).
New Zealand: South Island; Dusky Bay.
- 7- *D. elatum* (Roxb.) Wallich "Junghuhn Dacrydium"
Lond. J. Bot. 2:144 (1843)=*D. junghuhnii* Miq., Pl. Juhng. 1: 4
(1851)= *D. pierrei* Hickel, Bull. Soc. Dendr. France 76: 74 (1930).
Thailand to Vietnam; Malaysia; Philippines; Indonesia, 500-1700 m.
- 8- *D. ericioides* De Laub. "Meruong Dacrydium"
Fl. Males (1984-5).
Malaysia: Sarawak; Meroung Plateau.
- 9- *D. fonkii* (Phil.) Benth. et Hook. f. "Chilean Dacrydium"
Gen. Pl. 3(1): 433 (1880)= *Lepidothamnus fonkii* Philippi, Linnea
30: 370 (1860).
S. Chile: Valdivia to Chiloe Islands to 2000 m.
- 10- *D. franklinii* Hook.f. "Huon Dacrydium"
Lond. J. Bot. 4: 152,t.6 (1845)= *Lagarostrobus franklinii* (Hook.
f.) Quinn, Austr. J. Bot. 30: 316 (1982).
Australia: Tasmania, southern and western coasts.
- 11- *D. gibbsiae* Stapf. "Gibbs Dacrydium"
J. Linn. Soc. Bot. 42:192,t.4 (1914)= *D. beccari* var.
kinabaluense Corner, Gard. Bull. Str. Settl. 10: 243 (1939).
Malaysia: Sarawak, Mount Kinabalu, 1500-3300 m.
- 12- *D. gracillis* De Laub. "Kinabalu Dacrydium"
Fl. Males. (1984-5).
Malaysia: Sabah; Mt. Kinabalu, Silau Silau Trail, 1463-1524 m.
- 13- *D. guillauminii* Buchholz "Guilluamin Dacrydium"
Bull. Mus. Paris. ser.2, 21: 282 (1949)
S. New Caledonia: type from Riviere des Lacs, to 146 m.
- 14- *D. intermedius* T. Kirk "Red Dacrydium"
Trans. N.Z. Inst. 10: 386 (1878)= *Lepidothamnus intermedius*
(T. Kirk) Quinn, Austr. J. Bot 30: 316 (1982).
New Zealand: North and South Islands to W. Stewart Island.

- 15- *D. laxifolium* Hook. f. ex Hook. "Tongoriro Dacrydium"
Lond. J. Bot. 4: 143 (1845) = *Lepidothamnus laxifolius* (Hook. f.)
Quinn, Austr. J. Bot. 30: 316 (1982).
New Zealand: Mount Tongoriro and near Nelson, 762-2134 m.
- 16- *D. leptophyllum* (Wassch.) De Laub. "Goliath Dacrydium"
Fl. Males. (1984-5). = *Podocarpus leptophylla* Wassch., Blumea
4:414 (1941).
N.W. New Guinea: W. Irian; Mount Goliath to 3000 m.
- 17- *D. lycopodioides* Brong. et Griseb. "Mou Dacrydium"
Bull. Soc. Bot. France. 16:329 (1869).
S.E. New Caledonia: Mount Mou and Mount Humboldt, 800-1400 m.
- 18- *D. magnum* De Laub. "Obi Dacrydium"
J. Arn. Arb. 50: 299 (1969) = *D. beccari* var. *rudens* De Laub.,
J. Arn. Arb. 50: 303 (1969).
Indonesia: Moluccas: Obi Island endemic, at 500-600 m.
- 19- *D. medium* De Laub. "Pahang Dacrydium"
Blumea 23(1): 98 (1976)
Malaysia: Malaya; Indonesia: Sumatra, 975-2600 m.
- 20- *D. nausoriensis* De Laub. "Nausori Dacrydium"
J. Arn. Arb. 50: 287 (1969).
Fiji: both islands, type from Nausori Highlands, 120-580 m.
- 21- *D. nidulum* De Laub. "Vogelkop Dacrydium"
J. Arn. Arb. 50: 292, f. 39 (1969).
Indonesia: Celebes, Moluccas, New Guinea; Fiji, 0-1800 m.
- 21b. *D. nidulum* var. *araucarioides* De Laub. "Wissel Lake Dacrydium"
J. Arn. Arb. 50: 293, f. 36 (1969).
New Guinea: type from Wissel Lake, 750-2770 m.
- 22- *D. novo-guineense* Gibbs "New Guinea Dacrydium"
Contrib. Phytog. et Fl. Arfak Mts. 78 (1917).
Indonesia: Celebes, Moluccas, New Guinea at 1300 to 2750 m.
- 23- *D. pectinatum* De Laub. "Chinese Dacrydium"
J. Arn. Arb. 50: 289 (1969) = *D. pectinatum* var. *robustum* De Laub.,
J. Arn. Arb. 50: 291 (1969).
China: Hainan; Malaysia; Philippines; Indonesia: Borneo, 1000-1400 m.
- 24- *D. spathoides* De Laub. "Idenberg River
Dacrydium"
J. Arn. Arb. 50: 299 (1969).
Malaysia: Sarawak; Indonesia: Borneo, New Guinea, 1050-2200 m.
- 25- *D. xanthandrum* Pilg. "Morobe Dacrydium"
Bot. Jahrb. 69: 252 (1938).
Philippines; Indonesia: Sumatra, N.E. New Guinea to Solomon Islds.,
180-600m.

DECUSSOCARPUS De Laub.

(Podocarpaceae)

J. Arn. Arb. 50: 340 (1969)= *Afrocarpus* Gaussen, Trav.
Lab. For. Toul. 2(1): 113 (1974).

Decussocarpus differs from *Podocarpus* in that its leaves have no accessory transfusion tissue. The leaves are ovate to lanceolate in shape and are opposite and decussate. The male cone is reminiscent of the *Pinaceae* in shape. The female cones are born on a naked peduncle and lack a receptacle.

- 1- *D. comptonii* (Buchh.) De Laub. "Compton Decussoberry"
J. Arn. Arb. 50: 341 (1969)= *Podocarpus comptonii* Buchh., Bull. Mus. Hist. Nat. Paris., ser. 2, 21: 284 (1949).
New Caledonia: local, type from Mount Mou, 750-1450 m.
- 2- *D. falcatus* (Thunb.) De Laub. "South African Decussoberry"
J. Arn. Arb. 50: 359 (1969)= *Podocarpus falcatus* (Thunb.) R. Br. ex Mirb., Mem. Mus. Hist. Nat. Paris. 13: 75 (1825)= *P. gracilior* Pilg., Pflanzenr. 4, 5 (Heft 18): 71 (1903)= *P. gaussenii* Woltz, Trav. Lab. For. Toul. Tome 1, 8, art. 2: 6 (1969).
Ethiopia; Kenya; Uganda; Mozambique; Bechuanaland; South Africa.
- 3- *D. fleuryi* (Hickel) De Laub. "Fleury Decussoberry"
J. Arn. Arb. 50: 355 (1969)= *Podocarpus fleuryi* Hickel, Bull. Soc. Dendrol. France. 75 (1930),
S. China: Kwangtung; N. Vietnam: Tonkin; 1300-1400 m.
- 4- *D. mannii* (Hook.) De Laub. "Mann Decussoberry"
J. Arn. Arb. 50: 359 (1969)= *Podocarpus dawei* Stapf., Fl. Trop. Afr. (ed. Prain) 6(2): 342 (1917)= *P. mannii* Hook., J. Linn. Soc. 7: 218 (1864)= *P. usumbarensis* Pilg., Pflanzenr. 4.5 (Heft 18): 70 (1903).
Gabon; Cameroon; Congo; Zaire; Uganda; Rwanda; Tanganyika.
- 5- *D. maximus* De Laub. "Indonesian Decussoberry"
J. Arn. Arb. 50: 353, f. 10 (1969).
Indonesia: Sarawak, Sibul; Sumatra, Ashan.
- 6- *D. minor* (Carr.) De Laub. "Arnaud Decussoberry"
J. Arn. Arb. 50: 346 (1969)= *Podocarpus minor* (Carr.) Parl., DC Prodr. 16(2): 509 (1868)= *P. palustris* Buchh., Bull. Mus. Hist. Nat. Paris. ser. 2, 21: 284 (1949).
S. New Caledonia: type from Lake Arnaud, to 200 m.
- 7- *D. motleyi* (Parl.) De Laub. "Motley Decussoberry"
J. Arn. Arb. 50(3): 352 (1969)= *Podocarpus motleyi* (Parl.) Dummer, J. Bot. 52: 240 (1914)= *P. beccari* Parl., DC Prodr. 16(2): 508 (1868).
S. Thailand; Malaysia; Indonesia: Sumatra, Borneo, to 500 m.
- 8- *D. nagi* (Thunb.) De Laub. "Japanese Decussoberry"
J. Arn. Arb. 50: 359 (1969)= *Podocarpus nagi* (Thunb.) Pilg., ex Engler., Pflanzenr. 4(5), Heft 18: 60 (1903).
S. Japan, to Ryukyu Islands and Taiwan at 800 m.

- 9- *D. piresii* Silba "Pires Decussoberry"
Phytologia 54(6): 461, f.1 (1983).
W. Brazil: Territorio de Rondonia, Serra Pacas Novos.
- 10- *D. rospigliosii* (Pilg.) De Laub. "Rospiglios Decussoberry"
J. Arn. Arb. 50: 347 (1969)= *Podocarpus rospigliosii* Pilg., Notizbl.
Bot. Gard. Berlin 8: 273 (1923)
W. Venezuela; E. Columbia and C. Peru at 1700-2600 m.
- 11- *D. vitiensis* (Seem.) De Laub. "Vitu Decussoberry"
J. Arn. Arb. 50: 347 (1969)= *Podocarpus vitiensis* Seem.,
J. Bot. 1: 33, t.2 (1863)
Celebes; New Guinea; New Britain, Solomon Islds.; Fiji, 0-1800 m.
- 12- *D. wallichianus* (Presl.) De Laub. "Wallich Decussoberry"
J. Arn. Arb. 50: 349 (1964)= *Podocarpus wallichianus* C. Presl.,
Bot. Bemerk. 110 (1844)= *P. latifolia* Blume, Enum. Pl. Javae
1:89 (1879).
N.E. India; Indochina; Malaysia; Indonesia; Philippines, New Guinea;
New Britain, 100-914 m.

DISELMA Hook.f.

(Cupressaceae)

Fl. Tasm., Bot. Antarct. Voy. H.M. Ships Erebus et
Terror L; 353, t.98 (1857).

A monotypic genus according to Gaussen (1968).

- 1- *D. archeri* Hook f. "Tasmanian Diselma"
Fl. Tasm. l.c. (1857).
Australia: W. Tasmania, Cradle Mt., Lake Saint Clair, 1000-1350 m.

FALCATIFOLIUM De Laub.

(Podocarpaceae)

J. Arn. Arb. 50: 308 (1969).

Falcatifolium is distinguished from *Dacrydium* in its bilaterally flattened leaves that are falcate. The male cone and the female cone are born on specialized axillary shoots. The female cone is born on a pendulous peduncle, the cone is born on a receptacle which often has a thorny basal appendage.

- 1- *F. angustum* De Laub. "Sarawak Sickle-Pine"
J. Arn. Arb. 50: 312 (1969)
Malaysia: Sarawak, coastal areas; Bintulu and Kuching, 120-244 m.
- 2- *F. falciforme* (Parl.) De Laub. "Common Sickle-Pine"
J. Arn. Arb. 50: 309 (1969)= *Podocarpus falciiformis* Parl.,
DC Prodr. 16(2); 685 (1868)= *Dacrydium falciiforme* (Parl.) Pilg.,
Pflanzenr. 4.5. (Heft 18): 45 (1903).

Malaysia: Malaya; Sarawak; Sabah; Brunei; Indonesia: Borneo; Moluccas ,
600-1650 m.

- 3- *F. gruezoii* De Laub. "Greuzo Sickle-Pine"
Fl. Males. (1984).
Philippines: Mindanao to Luzon; Indonesia: Celebes to Obi Island, 700-1400 m.
- 4- *F. papuanum* De Laub. "Papuan Sickle-Pine"
J. Arn Arb. 50: 312 (1969).
Indonesia: New Guinea to Papua, 2000-2400m.
- 5- *F. taxoides* (Brong. et Griseb.) De Laub. "Yew-leaf Sickle-Pine"
J. Arn. Arb. 50: 310 (1969) = *Dacrydium taxoides* Br. et Gr., Ann. Sci.
Nat. Paris, ser.5 (6): 245 (1866) = *Podocarpus taxodioides* Carr., Tr.
Conif. ed.2: 657 (1867).
C. New Caledonia: type near Balade, 800-1400 m.

FITROYA Hook f.

(CUPRESSACEAE)

ex Lindl., J. Hort. Soc. Lond. 6. 264(1851).

Gaussen (1968) recognized *Fitroya* as a monotypic genus.

- 1- *F. cupressoides* (Molina) Johnston "Patagonian Fitroya"
Contr. Gray Herb. n.s. 70. 91 (1924) = *F. patagonica* Hook. f.,
ex Lindl., J. Hort. Soc. Lond. 1.c. (1851).
S. Chile: Valdivia, W. La Union; Argentina: Patagonia, 500-1000 m.

FOKIENA Henry et Thomas

(Cupressaceae)

Gard. Chron. ser.3. 49: 66 (1911)

Cheng et Fu (1978) recognize one species of *Fokiena*.

- 1- *F. hodginsii* (Dunn.) Henry et Thomas "Hodgins Fokiena"
Gard. Chron. 1.c., t.32-33 (1911) = *F. kawaii* Hayata, Bot. Mag.
Tokyo 31: 116, f. (1917)
China: Chekiang to Yunnan; N. Vietnam: Tonkin, 600-2000 m.

GINKGO L.

(Ginkgoaceae)

Mant. Pl. 2: 313 (1771)

Cheng et Fu (1978) recognize *Ginkgo* as a monotypic genus.

- 1- *G. biloba* Linn. "Ginkgo"
Mant. Pl. 1.c. (1771) = *Salisburia adiantifolia* Smith,
Trans. Linn. Soc. Lond. 3: 330 (1797).

S. China: Chekiang; Kweichow and Yunnan, 40-2000 m.

GLYPTOSTROBUS Endl.

(Taxodiaceae)

Syn. Conif. 69 (1847)

According to Cheng et Fu (1978) the name *Glyptostrobus lineatus* (Poir) Druce was based on a cultivated specimen of *Taxodium distichum* var. *nutans*.

- 1- *G. pensilis* (Staunt.) K. Koch "Chinese Swamp Cypress"
 Dendr. 2(2): 191 (1873).
 China: Fukien; Kiangsi; Kwangtung; Kwangsi Chuang; Szechuan and Yunnan,
 to 1000 m.

HALOCARPUS Quinn

(Podocarpaceae)

Austr. J. Bot. 30: 317 (1982)

De Laubenfels (1969) considered a distinct section of *Dacrydium* [Group C] that is distinguished by its female cones having inverted seeds that are not erect and are covered by a receptacle. Juvenile plants have distichous leaves. *Halocarpus* consists of 3 subtropical species (De Laubenfels. pers. comm. July 1983).

- 1- *H. bidwillii* (Hook. f. ex T. Kirk) Quinn "Bidwill Haloberry"
 Austr. J. Bot. 1.c. (1982) = *Dacrydium bidwillii* Hook f. ex T. Kirk,
 Trans. N.Z. Inst. 10: 388 (1878).
 New Zealand: South Island to Stewart Island.
- 2- *H. biformis* (Hook.) Quinn "Two-leaf Haloberry"
 Austr. J. Bot. 1.c. 318 (1982) = *Dacrydium biforme* (Hook.) Pilg.,
 ex Engl., Pflanzenr. Taxac. 18: 45 (1903).
 New Zealand; North Island endemic.
- 3- *H. kirkii* (F. Muell. ex Parl.) Quinn "Kirk Haloberry"
 Austr. J. Bot. 1.c. 318 (1982) = *Dacrydium kirkii* F. Muell. ex Parl.,
 DC. Prodr. 16(2): 495 (1869).
 New Zealand: North Island, between Hokiana and Manukau Harbor.

JUNIPERUS L.

(Cupressaceae)

Sp. Pl. 1038 (1753) = *Arceuthos* Ant. et Kotschy,
 Oestr. Bot. Wochenbl. 249 (1854) = *Sabina* Mill., Gard. Dict. 3 (1754).

Cheng et Fu (1978) reduced several taxa listed by Dallimore and Jackson (1966) to synonymy. Zanoni and Adams (1979) revised the nomenclature of the Mexican and Guatemalan species. Browicz (1982) revised the nomenclature of several Asiatic species.

- 1- *J. ashei* Buchh. "Ashe Juniper"
 Bot. Gaz. 90: 329, f.1-2 (1930).
 U.S.A.: S. Missouri to C. Texas to N.W. Coahuila, Mexico, 244-1800 m.
- 1b- *J. ashei* var. *saltillensis* (Hall) Silba, comb. nova "Saltillo Juniper"
 Synonymy: *J. saltillensis* M.T. Hall, Fieldiana Bot. 34(4):45 (1971).
 Mexico: Chihuahua; Coahuila; W. Zacatecas; Neuvo Leon, 1500-2900 m.
- 2- *J. barbadensis* L. "West Indies Juniper"
 Sp. Pl. 1039 (1753) = *J. ekmanii* Florin, Acta Hort. Gothoburg. 3 (1928) =
J. gracilior Pilg., Symb. Ant. 7: 481 (1913) = *J. lucayana* Britt.,
 N. Am. Trees. 121 (1908) = *J. saxicola* Britt. et Wils., Bull. Torr. Cl.
 50: 35 (1923) = *J. urbaniana* Pilg. et Ekman, Ariki Bot. Stockh. 20a.
 no.15. 9 (1926).
 Bahamas; Cuba; Jamaica; Haiti and Barbados.
- 3- *J. bermudiana* L. "Bermuda Juniper"
 Sp. Pl. 1039 (1753)
 Bermuda, rare, many trees died from recent blight on island.
- 4- *J. blancoi* Mart. "Blanco Juniper"
 An. Inst. Biol., Mexico 17: 73-74 (1946).
 Mexico: N.E. Sonora; Durango, El Salto, 2600-2900 m.
- 5- *J. brevifolia* Antoine "Azores Juniper"
 Cupress. Gatt. 16.tt.20-22 (1857) = *J. oxycedrus* var. *brevifolia*
 Hochst., Senb. Fl. Azor. 26 (1844).
 Azores Islands (Portuguese Administration), to 1500 m.
- 6- *J. californica* Carr. "California Juniper"
 Rev. Hort. (Paris), ser.4, 3:353, f.21 (1854).
 U.S.A.: W. California to W. Arizona to n. Baja California, Mexico,
 305-1524 m.
- 7- *J. cedrus* Webb. et Berth. "Canary Island Juniper"
 Phyt. Canar. 3: 267, t.2, f.1-3 (1836-40).
 Canary Islands: Palma, to 2100 m.
- 8- *J. centrasiatica* Kom. "Kuen-luen Juniper"
 Not. Syst. Herb. Bot. Reip. Ross 5: 28 (1924).
 China: Sinkiang; Kuen-luen Mountains, 3000-4000 m.
- 9 *J. chinensis* L. "Chinese Juniper"
 Mant. Pl. 1:127 (1769) = *J. gaussenii* Cheng, Trav. Lab. For. Toul.
 1,3(8):139 (1940).
 China and Japan, abundant, 500-1000 m.
- 9b. *J. chinensis* var. *sargentii* Henry et Elwes "Sargent Juniper"
 Tr. Grt. Brit. et Irel. 6: 1432 (1912).
 N.E. China; Korea; U.S.S.R.: Sakhalin; Japan .
- 10- *J. comitana* Mart. "Chiapas Juniper"
 An. Inst. Biol., Mexico 15: 12-13 (1944)
 Mexico: S.E. Chiapas; Guatemala: Baja Verapaz, 1300-2300 m.

- 11- *J. communis* L. "Common Juniper"
 Sp. Pl. 1040 (1753) = *J. communis* var. *depressa* Pursch., Fl. Amer.
 Septr. 2: 646 (1814) = *J. communis* var. *hemisphaerica* (Presl.) Parl.,
 DC. Prodr. 16 (2): 479 (1868) = *J. communis* var. *nipponica* Wils.,
 Conif. et Tax. Jap. 81 (1916) = *J. communis* var. *saxatilis* Pall., Fl.
 Ross. 1(2):12 (1788) = *J. sibirica* Burgsd., Anleit. Sich. Erzieh.
 Holzart. 124 (1787).
 N. America; Europe; N. Africa; N. Asia to Siberia, 2438-3505 m.
- 11b. *J. communis* var. *oblonga* (Bieb.) Loud. "Caucasian Juniper"
 Arb. et Fut. Brit. 4: 2490, f. 2345 (1844) = *J. oblonga* Bieb., Fl.
 Taur.-Cauc. 2: 426 (1808) = *J. albanica* Penzes, Bot. Kozl. 57: 49
 (1970) = *J. communis* var. *caucasica* Endl., Syn. Conif. (1847).
 Albania; Turkey; U.S.S.R.: Azerbaydzhan to N.W. Iran, to 1200 m.
- 12- *J. conferta* Parl. "Shore Juniper"
 Conif. Nov. 1. (1863).
 U.S.S.R.: Sakhalin to N. Japan.
- 13- *J. convallium* Rehd. et Wils. "Mekong Juniper"
 Sarg., Pl. Wilson. 2: 62 (1914) = *J. mekongensis* Kom., Not. Syst. Herb.
 Hort. Bot. Reip. Ross. 5: 29 (1924) = *J. ramulosa* Florin, Acta
 Hort. Gothoburg. 3: 5, t. 2 (1927).
 China: Tibet, Zsachju, also in Ndrome, N.W. Szechuan, 2500-3700 m.
- 13b-*J. convallium* var. *microsperma* (Cheng et Fu) Silba, comb. nova
 "Smallberry Mekong Juniper"
 Synonymy: *Sabina convallium* var. *microsperma* Cheng et L.K. Fu, Acta
 Phytotax. Sin. 13(4): 86 (1975).
 China: Tibet, to 4000 m.
- 14- *J. davurica* Pall. "Dahurian Juniper"
 Fl. Ross. 1(2): 13, t. 55 (1788)
 N. Mongolia; N. China: Heilungkiang; Korea, 400-1400 m.
- 15- *J. deppeana* Steudel "Eastern Alligator
 Juniper"
 Nomencl. Bot. ed. 2, 1: 835 (1840) = *J. deppeana* var. *robusta* Mart.,
 An. Inst. Biol., Mexico 17: 47 (1946) = *J. deppeana* var. *zacatec-*
ensis Mart., l.c., 57-58 (1946) = *J. patoniana* Mart., l.c., 62
 (1946) = *J. deppeanana* var. *sperryi* Correl, Wrightia 3: 188 (1966).
 U.S.A.: S.E. Arizona to W. Texas to Michoacán, Mexico, 1372-2438 m.
- 15b. *J. deppeana* var. *pachyphlaea* (Torr.) Mart. "Western Alligator
 Juniper"
 An. Inst. Biol., Mex. 17: 53 (1946)
 U.S.A.: Arizona to W. Texas to Sonora, Mexico
 A distinct variety with finer foliage than the species; the foliage is
 also more glandular than the species, leaving a white resin dot.
- 16- *J. drupacea* Labill. "Syrian Juniper"
 Icon. Pl. Syr. 2: 14 (1791) = *Arceuthos drupacea* Ant. et Kotschy,
 Oestr. Bot. Wochenbl. 4: 249 (1854).
 Greece; Turkey; Syria; Lebanon, 300-2000 m.

- 17- *J. durangensis* Mart. "Durango Juniper"
An. Inst. Biol., Mex. 17: 94,95 (1946).
Mexico: Sonora to S.W. Zacatecas; N. Jalisco; Aguascalientes, 1600-2900 m.
- 18- *J. excelsa* Bieb. "Grecian Juniper"
Beschr. Land. Fluss. Terek. Kur. 204 (1800).
Yugoslavia; Albania; S.Bulgaria; Greece; Turkey; Lebanon; Iran; U.S.S.R.,
- 18b. *J. excelsa* var. *polycarpus* (C. Koch) Silba, comb. nova. "Persian Juniper"
Synonymy: *J. polycarpus* C. Koch, Linnaea 22: 303 (1849) = *J. isophyllos* C.Koch, l.c. 304 (1849) = *J. macropoda* Boiss., Fl. Or. 5: 709 (1884) = *J. seravschanica* Kom., J. Bot. URSS 17: 481 (1932) = *J. turcomanica* B. Fedtsch, Fl. Turcom. 1:15 (1932).
Turkey; U.S.S.R.; Iran; Afghanistan; Pakistan.
- 19- *J. flaccida* Schlecht. "Mexican Weeping Juniper"
Linnaea 12: 495 (1838).
U.S.A.: S. Texas; Mexico: Sonora to Oaxaca, 900-2900 m.
- 19b- *J. flaccida* var. *poblana* Mart. "Bigberry Weeping Juniper"
An. Inst. Biol., Mex. 17: 31 (1946).
Mexico: Pueblo; Morelos; Jalisco; Guerrero; Oaxaca, 1200-2300 m.
- 20- *J. foetidissima* Willd. "Crimean Juniper"
Sp. Pl. 4,2: 853 (1806) = *J. foetidissima* var. *pindicola* Form., Beitr. Fl. Serb. 2:20 (1895).
Yugoslavia; Albania; Greece; Turkey; USSR; Syria; Lebanon, 1500-2000 m.
- 21- *J. formosana* Hayata "Formosan Juniper"
Gard. Chron. ser.3.43 (1908) = *J. formosana* var. *concolor* Hayata, Ic. Pl. Form. 7: 39, f.25 (1918).
China: Tibet to Anhwei; Taiwan, 1300-4000 m.
- 22- *J. gamboana* Mart. "Gamboa Juniper"
Anal. Inst. Biol., Mex. 15: 7,8 (1944).
S. Mexico: Chiapas to Sierra de los Cuchumatanes, Guatemala, 1600-2300 m.
- 23- *J. horizontalis* Moench "Creeping Juniper"
Meth. Pl. 699 (1974) = *J. communis* var. *jackii* Redh., Mitt. Deutsch. Dendrol. Ges. 16:70 (1907).
S. Canada: British Columbia; U.S.A.: Montana; Illinois: W. New York to E. Maine.
- 24- *J. jaliscana* Mart. "Jalisco Juniper"
An. Inst. Biol., Mex. 17: 69 (1946).
Mexico: Durango, Pueblo Nuevo; Jalisco, Cuale, 1450-2670 m.
- 25- *J. komarovii* Florin "Komarov Juniper"
Acta Hort. Gothoburg. 3: 3,t.1,f.1-3 (1927) = *J. glaucescens* Florin, l.c., 5, t.4, f.1-2 (1927).
China: N.W. Szechuan, Tsipula; S. Kansu, 3200-4000 m.

- 26- *J. monosperma* (Engelm.) Sarg. "One-seed Juniper"
Silva North Am. 10; 89, pl.522 (1896)= *J. gymnocarpa* (Lemm.) Cory,
in part, J. Arn. Arb. 7: 329 (1936).
U.S.A.: C. Colorado to W. Texas; N. Mexico: Tamaulipas, 914-2134 m.
- 26b- *J. monosperma* var. *gracilis* Mart. "Slender One-seed Juniper"
A. Inst. Biol., Mex. 17: 111-112 (1946).
Mexico: S. Neuvo Leon to N. Hidalgo, 1050-2800 m.
- 27- *J. monticola* Mart. "Mountain Juniper"
An. Inst. Biol., Mex. 17: 79 (1946)= *J. monticola* f. *compacta* Mart.,
l.c.87 (1946)= *J. monticola* f. *orizabensis* Mart., l.c. 91 (1946).
Mexico: Hidalgo; Jalisco; Michoacan, 2400-4300 m.
- 28- *J. occidentalis* Hook. f. "Western Juniper"
Fl. Bor. Am. 2: 166 (1839).
U.S.A.: S. Washington; W. Idaho; N.W. Nevada, E. California, to 3048 m.
- 28b- *J. occidentalis* var. *australis* (Vasek) Holmgren "San Bernardino Juniper"
Interm. Fl. 1: 239 (1972).
U.S.A.: California, San Bernardino and Lassen Counties.
- 29- *J. oteosperma* (Torr.) Little "Utah Juniper"
Leafl. West. Bot. 5: 125 (1948)= *J. utahensis* (Engelm.) Lemm.,
Calif. State Bd. For. Bein. Rep. 183, pl.28, f.2 (1890). = *J. calif-*
ornica var. *utahensis* Engelm., Acad. Sci. St. Louis Trans. 3: 588
(1877).
U.S.A.: E. Idaho to W. New Mexico, 914-2438 m.
- 30- *J. oxycedrus* L. "Mediterranean Juniper"
Sp. Pl. 1038 (1753)= *J. macrocarpa* Sibth. et Sm., Fl. Graec.
Prodr. 2: 263 (1913).
Mediterranean Region; Portugal to N. Iran, 2100-3150 m.
- 30b- *J. oxycedrus* var. *transtagna* (Franco) Silba, comb. nova.
"Portuguese Juniper"
Synonymy: *J. oxycedrus* subsp. *transtagna* Franco, Repr. Nov. Spec.
Regni. Veg. 68: 166 (1963).
S.W. Portugal, maritime region.
- 31- *J. phoenicea* L. "Phoenicean Juniper"
Sp. Pl. 1040 (1753)= *J. canariensis* Guyot, Trav. Lab. For. Toul.
Tome 1,3, art.20: 7 (1942)= *J. oophora* Kunze, Flora. 637 (1846)
= *J. phoenicea* var. *turbinata* (Guss.) Parl., DC. Prodr. 16(2):
487 (1868).
Mediterranean Region: Canary Islands to Isreal, 1000-2400 m.
- 32- *J. pinchotli* Sudw. "Eastern Pinchot
Juniper"
Forest. et Irrig. 10: 204 (1905).
U.S.A.: S.W. Oklahoma to W. Texas; Mexico: Chihuahua, 305-1524 m.
- 32b- *J. pinchotii* var. *erythrocarpa* (Cory) Silba, comb. nova.
"Western Pinchot Juniper"
Synonymy: *J. erythrocarpa* Cory, Rhodora 38: 196 (1936)
= *J. erythrocarpa* var. *coahuilensis* Mart., An. Inst. Biol., Mex.

- 15: 115, 116 (1946)= *J. texensis* Van Melle, Phytologia 4: 26 (1952).
U.S.A.: S. Ariz. to S.W. Texas to N. Zacatecas, Mexico, 914-1524 m.
- 33- *J. pingii* Cheng "Ping Juniper"
Trav. Lab. For. Toul. 5,1 (2): 93 (1939).
China: Yunnan to Szechuan, 2600-3000 m.
- 33b- *J. pingii* var. *wilsonii* (Rehd.) Silba, comb. nova. "Wilson Juniper"
Synonymy: *J. squamata* var. *wilsonii* Rehd., J. Arn. Arb. 1: 190 (1920).
China: Tibet to Hupeh, 3000-4900 m.
- 34- *J. przewalskii* Kom. "Prezwalskii Juniper"
Cymn. Nonn. Asiat. 2: 28 (1924)= *J. zaidamensis* Kom., l.c. 29 (1924).
China: Tsinghai; Kansu; Szechuan, 2600-4000 m.
- 35- *J. procera* Hochst. ex Endl. "East African Juniper"
Syn. Conif. 26 (1847).
Ethiopia; Kenya; Tanganyika, 1200-3000 m.
- 36- *J. procumbens* (Endl.) Miq. ex Sieb. et Zucc. "Japanese Juniper"
Fl. Jap. 2: 59, t. 127, f. 3 (1870).
Japan: Kyou-Shou.
- 37- *J. pseudosabina* Fitch. et Mey. "Sinkiang Juniper"
Ind. Sem. Hort. Petrop. 8: 15 (1842).
U.S.S.R.: Uzbek to Sinkiang Uighur, China, 2500-3300 m.
- 37b- *J. pseudosabina* var. *turkestanica* (Kom.) Silba, comb. nova. "Turkestan Juniper"
Synonymy: *J. turkestanica* Kom., Not. Syst. Herb. Hort. Bot. Reip. Ross. 5: 26 (1924).
U.S.S.R.: Kazakhstan to W. Sinkiang Uighur, China, 2800-4000 m.
- 38- *J. recurva* Buch.-Hamilt. ex D. Don "Himalayan Drooping Juniper"
Prodr. Fl. Nep. 55 (1825).
Afghanistan to Bhutan to N. Burma to S. China: Tibet, 3000-4000 m.
- 38b- *J. recurva* var. *coxii* (Jackson) Melville "Cox Juniper"
Kew Bull. 533 (1958).
N. Burma to Yunnan, China, to 3000m.
- 39- *J. rigida* Sieb. et Zucc. "Temple Juniper"
Fl. Jap. 2: 56, t. 125 (1870).
N.E. China; Korea; Japan, to 1500 m.
- 40- *J. sabina* L. "Savin Juniper"
Sp. Pl. 2: 1039 (1753)= *Sabina vulgaris* var. *yulinensis* Cheng et Chun, Acta Phytotax. Sin. 19(2): 263 (1981).
Central and southern Europe to U.S.S.R. and China, 1100-3300 m.
- 41- *J. saltatoria* Rehd. et Wils. "Szechuan Juniper"
Sarg., Pl. Wils. 2: 61 (1914).
China: Kansu; N.W. Szechuan; Yunnan; Tibet, 2400-4300 m.

- 42- *J. scopulorum* Sarg. "Rocky Mountain Juniper"
Gard. et Forest 10: 420, f.54 (1897).
S.W. Canada; W. United States: Rocky Mt. Region; N. Mexico, 1524-2743 m.
- 43- *J. semiglobosa* Regel "Russian Juniper"
Acta Hort. Petrop. 6: 487 (1979) = *J. drobovii* Sumnev., Not. Syst.
Herb. Inst. et Zool. Acad. Sci. Uzbek. 10: 22 (1948) = *J. jarkendensis*
Kom., Not. Syst. Herb. Hort. Bot. Petrop. 4: 181 (1925) = *J. schuganica*
Kom., J. Bot. URSS 17: 482 (1932) = *J. talassica* Lipsay, Tr. Esksped.
Issl. Kol. Raionov. Azir. Botan. Issl. no.6: 185 (1912) = *J. tianshanica*
Sumnev, l.c. (1948).
Afghanistan; U.S.S.R: Kazakhstan to Sinkiang, China.
- 44- *J. squamata* Buch.-Hamilt. ex Lamb. "Flaky Juniper"
Descr. Gen. Pinus 2: 17 (1824) = *J. morrisonicola* Hay., Gard. Chron.
ser.3. 43: 194 (1908) = *J. squamata* var. *fargesii* Rehd. et Wils. ex
Sarg., Pl. Wilson. 2: 59 (1914).
Afghanistan; India; China: Tibet to Anwhei; Taiwan, 1600-4000 m.
- 45- *J. standleyi* Steyererm. "Standley Juniper"
Publ. Field. Mus. Nat. Hist., Chicago, Bot. ser.23: 3 (1943).
Mexico: Chiapas ; Guatemala, 3000-4600 m.
- 46- *J. taxifolia* Hook. et Arn. "Yew-leaf Juniper"
Bot. Beech. Voy. 271 (1841) = *J. lutchuensis* Koitz., B.M.T.32: 138(1918).
S. Japan: Bonin and Ryukyu Islands.
- 47- *J. thurifera* L. "Spanish Juniper"
Sp. Pl. 1039 (1753) = *J. thurifera* var. *gallica* De Lainoy, Bull.
Soc. Bot. Fr. 232 (1897).
N. Algeria; C. Spain and S.E. France.
- 48- *J. tibetica* Kom. "Tibetian Juniper"
Not. Syst. Herb. Hort. Bot. Reip. Ross. 5: 27 (1924) = *J. distans*
Florin, Acta Hort. Gothob. 3: 6, t.3, f.1-2 (1927) = *J. potanini*
Kom., l.c. 28 (1924).
China: Kansu; Tsinghai; Szechuan; Tibet, 2800-4600 m.
- 49- *J. virginiana* L. "Eastern Red Juniper"
Sp. Pl. 1039 (1753).
S.E. Canada; E. United States: S.W. Maine to N. Florida.
- 49b- *J. virginiana* var. *silicicola* (Small) Silba, comb. nova.
"Southern Red Juniper"
Synonymy: *Sabina silicicola* Small, J. N.Y. Bot. Gard. 24: 5
(1923) = *Juniperus silicicola* (Small) Bailey, Cult. Conif. 197
(1933).
S.E. United States: E. North Carolina to S.E. Texas, altitude near
sea level.
- 50- *J. wallichiana* Hook. f. "Wallich Juniper"
Thomas ex Parl., DC Prodr. 16(2): 482 (1868) = *J. indica* Bertol,
Misc. Bot. 23: 16 .
N. India; Nepal; Bhutan; China: Tibet and Yunnan, 3000-5200 m.

KETELEERIA Carr.

(Pinaceae)

Rev. Hort. 1866: 449 (1866).

Dallimore and Jackson (1966) recognized two species of *Keteleeria*. Descriptions of other taxa accepted by Cheng and Fu (1978) seemed to be based on inconsistent characteristics based on scarce herbarium material.

1- *K. davidiana* (Bertr.) Beissn.

"David Keteleeria"

Handb. Nadelh. 424, f. 117 (1891)= *K. calcarea* Cheng et Fu, Acta Phytotax. Sin. 13(4): 82, f.9 (1975)= *K. chien-peii* Flous, Bull. Soc. Hist. Nat. Toul. 69.2, f.1-11 (1936)= *K. dopiana* Flous, Trav. Lab. For. Toul. Tome 1, 2, art. 14(4), (1936)= *K. evelyaniana* Mast., Gard. Chron. ser.3. 33: 194, f.82 (1903)= *K. formosana* Hay., Gard. Chron. ser.3.43: 194 (1908)= *K. hainanensis* Chun et Tsiang, Acta Phytotax. Sin. 8(3): 259 (1963)= *K. pubescens* Cheng et Fu, l.c. 82, f.8, 8-14 (1975)= *K. roulletii* (A. Cheval.) Flous, Trav. Lab. For. Toul., l.c. 8 (1936).

S. Vietnam; S. Laos; W. China: Yunnan to W. Hupeh, also on Hainan; Taiwan, 300-2600 m.

2- *K. fortunei* (A. Murr.) Carr.

"Fortune Keteleeria"

Rev. Hort. 1866: 499, f. (1866-1868)= *K. cyclolepis* Flous, Bull. Soc. Hist. Nat. Toul. 69:4, f.1-11 (1936)= *K. oblonga* Cheng et L.K. Fu, Acta Phytotax. Sin. 13(4): 82, f.8, 1-7 (1975).

S. China: S. Chekiang to Kwangsi Chuang, 340-1400 m.

LARIX Mill.

(Pinaceae)

Gard. Dict. 2:2. sp. no. 3 (1754); Link, Linnea 15: 533 (1841).

Nine species of *Larix* are accepted here. Dallimore and Jackson (1966) had recognized a somewhat broader treatment; herbarium specimens I have seen at Harvard (A, GH) suggest closer relationships.

1- *L. decidua* Mill.

"European Larch"

Gard. Dict. Abridge ed. 4, 2 (1754)= *L. europaea* DC ex Lamb. et DC., Fl. Franc. ed. 33: 277 (1805).

S.E. France; Switzerland; N. Italy; S. Germany; Austria.

1b- *L. decidua* var. *polonica* (Racib) Ostenf. et Syr.-Lars. "Polish Larch"

Pflanzenr. 2: 63 (1930)= *L. sudetica* Domin, Sborn. Vyzk. Ust. Zem. RCS. 65: 97 (1930).

S.E. Poland: Lysa Gora Region; N. Czechslovakia: Altvater Mts.; U.S.S.R.: N.W. Ukraine, 137-1219 m.

2- *L. gmelini* (Rupr.) Rupr.

"Dahurian Larch"

Fl. Bor.-Ural. 48 (1854)= *L. dahurica* Laws., Agric. Man. 389 (1836).

U.S.S.R.: Siberia, E. Yenisei River.

2b- *L. gmelini* var. *japonica* (Reje.) Pilg.

"Kurile Larch"

Engl. et Prantl., Die Naturl. Pflanzenr. ed. 2.13: 327 (1926)=

L. gmelini var. *olgensis* (Henry) Ostenf. et Syrach.-Larsen,

Pflanzenr. 2: 62 (1930).

U.S.S.R.: Siberia; Sakhalin; Olga Bay region.

- 2c- *L. gmelini* var. *principis-rupprechtii* (Mayr.) Pilg. "Prince Rupprecht Larch"
Engl. U. Prantl., Pflanzenfam. ed. 2.13: 327 (1926).

China: Heilungkiang (Manchuria); N.W. Korea, 1400-2800 m.

- 3- *L. griffithii* Hook. f. "Himalayan Larch"
Himal. Journ. 2: 44 (1854) = *L. griffithiana* (Lindl. et Gord.) Hort. ex
Carr., Tr. Conif. 278 (June 1855) = *L. speciosa* Cheng et Law, Acta Phytotax.
Sin. 13(4): 84, f.25, 1-6 (1975).

E. Nepal; Sikkim; Bhutan; N. Burma; China: Tibet and Yunnan, 1800-4100 m.

- 3b- *L. griffithii* var. *masteriana* (Rehd. et Wils.) Silba, comb. nova.
"Masters Larch"
Synonymy: *L. masteriana* Rehd. et Wils., Sarg. Pl. Wilson. 2: 19 (1914).
China: W. Szechuan, Wassu Tribal State, Niu-tou-shan, 2300-3500 m.

- 4- *L. kaempferi* (Lamb.) Carr. "Japanese Larch"
Fl. des Serr. 11: 97 (1856) = *L. leptolepis* (Sieb. et Zucc.) Gord.,
Pinet. 128 (1858).
Japan: C. Honshu and Mt. Fujiyama, 1219-2800 m.

- 5- *L. laricina* (Du Roi) K. Koch "Tamarack Larch"
Dendr. 2(2): 263 (1873).
C. Canada to Newfoundland; U.S.A.: Alaska to W. Maryland, 518-1219 m.

- 6- *L. lyallii* Parl. "Subalpine Larch"
Conif. Nov. Nonn. Descr. 3 (1863); Seeman, J. Bot. Brit. Foreign
1: 35 (1863).
Canada: S.E. British Columbia; S.W. Alberta; U.S.A. : Washington;
N. Idaho; W. Montana, 1219-2438 m.

- 7- *L. occidentalis* Nutt. "Western Larch"
No. Am. Sylva 3: 143, pl. 120 (1849).
S.W. Canada; U.S.A: N. Washington to W. Montana, 610-2134 m.

- 8- *L. potaninii* Batal. "Chinese Larch"
Acta Hort. Petropol. 13: 385 (1894) = *L. chinensis* Beissn., Mitt.
Deutsch. Dendr. Ges. 5: 68 (1896) = *L. himalaica* Cheng et L.K. Fu,
Acta Phytotax. Sin. 13(4): 84, pl.26, illus. 1-6 (1975).
China: Tibet; Szechuan; Kansu; Shensi, 2500-4200 m.

- 9- *L. russica* (Endl.) Sabine ex Trautv. "Siberian Larch"
Acta Hort. Petrop. 9: 212 (1884) = *L. sibirica* Ledeb., Fl. Alt. 4:
204 (1833) = *L. sukaczewii* Dylis, Khvoin. Por. 50: 489 (1945).
U.S.S.R. : Siberia, Altai Mountains, 762- 1524 m.

LIBOCEDRUS Endl.

(Cupressaceae)

Syn. Conif. 42 (1847) = *Austrocedrus* Florin et Boutelje, Acta Hort. Berg. 17: 28 (1954) = *Papuacedrus* Li, Journ. Arn. Arb. 34: 25 (1953).

The genus *Libocedrus* contains eight species (De Laubenfels, pers. comm., July 1983). De Laubenfels (1974) included *Austrocedrus* with *Libocedrus* to clarify the trans-Pacific relationships of other Coniferae (*Araucaria*, *Tacrydium*, *Perussocarpus*, *Prumnopitys*). De Laubenfels (1974) also rejected *Papuacedrus*, which does not have spiral sporophylls, rather it has opposite decussate sporophylls and pseudospirals sometimes occur.

- 1- *L. arfakensis* Gibbs "Arfak Libocedar"
Ph. Fl. Arfak Mts. 84, f. 6a-b (1917) = *Papuacedrus arfakensis* (Gibbs) Li, Journ. Arn. Arb. 34: 25 (1953).
New Guinea: Dutch New Guinea, Arfak Mts., 2300-2600 m.
- 2- *L. austro-caledonica* Brongn. et Gris. "Humboldt Libocedar"
Ann. Sci. Nat. ser.5, 13: 349 (1871).
S. New Caledonia; Mt. Koghis; Mt. Humboldt; Mt. des Sources, 700-1300 m.
- 3- *L. bidwillii* Hook. f. "Bidwill Libocedar"
Handb. New Zeal. Fl. 257 (1867).
New Zealand: W. North Island and N. South Island, 300-2000 m.
- 4- *L. chevalieri* Buchholz "Chevalier Libocedar"
Bull. Mus. Hist. Nat. Paris, ser.2, 21: 283 (1949).
S.E. New Caledonia: W. Mount Humboldt, rare, 1400-1600 m.
- 5- *L. chilensis* Endl. "Chilean Libocedar"
Syn. Conif. 44 (1847) = *Austrocedrus chilensis* (D. Don) Florin et Boutelje, Acta Hort. Berg. 17: 29 (1954).
S. Chile: Antuco; Valdivia; S. Argentina: Questrihue, 950-2400 m.
- 6- *L. papuana* F. Muell. "Papuan Libocedar"
Trans. Roy. Soc. Vict. n.s. 1(1): 32 (1899) = *L. torricellensis* Schlecht. ex Lauterb., Bot. Jahrb. 50: 53, f.2, h-n (1913)
= *Papuacedrus papuana* (F. Muell.) Li, J. Arn. Arb. 34: 25, f.33 (1953) = *P. torricellensis* (Schl. ex Laut.) Li, l.c., 25 (1953).
Moluccas; New Guinea to Papua, 1300-3600 m.
- 7- *L. plumosa* (D. Don) Sarg. "Kawaka Libocedar"
Silva N. Amer. 10: 134 (1896).
New Zealand: N.W. North Island to Westhaven, S. Island, 800-3800 m.
- 8- *L. yateensis* Guillaumin "Yate River Libocedar"
Bull. Mus. Hist. Nat. Paris, ser.2, 21: 457 (1949).
S.E. New Caledonia: Riviere Bleue and Ouinne River, 150-250 m.

METASEQUOIA S. Miki

(Taxodiaceae)

Jap. Journ. Bot. 9: 261 (1941).

- 1- *M. glyptostrobooides* Hu et Cheng "Dawn Redwood"
 Bull. Fan. Mem. Inst. Biol. Peiping, n.s. 1(2): 154, pl., f.1-2 (1948).
 China: E. Szechuan; S.W. Hupeh; N.W. Hunan, 750-1500 m.

Cheng et Fu (1978) recognize *Metasequoia* as a monotypic genus.

MICROBIOTA Komarov

(Cupressaceae)

Not. Syst. Herb. Hort. Petrop. 4: 180 (1923).

Gausson (1968) recognized *Microbiota* as a monotypic genus.

- 1- *M. decussata* Kom. "Suchan Microbiota"
 Not. Syst. Herb. Hort. Petrop., l.c.(1923).
 U.S.S.R.: S.E. Siberia, Sikhote Alin Province, Suchan River Valley.

MICROCACHRYS Hook.f. ex Hook.

(Podocarpaceae)

Lond. J. Bot. 4: 149 (1845).

Dallimore and Jackson (1966) recognized *Microcachrys* as a monotypic genus.

- 1- *M. tetragona* Hook. "Tasmanian Microcachrys"
 Lond. J. Bot., l.c. 150 (1845).
 Australia: W. Tasmania, Mount Lapeyrouse .

MICROSTROBUS Gard. et Johns.

(Podocarpaceae)

Contrib. N.S.W. Nat. Herb. 1: 316 (1951) = *Pherosphaera* Hook.f.,
 Fl. Tasmania 1: 335 (1857)

- 1- *M. fitzgeraldii* (F. Muell.) Gard. et L.A.S. Johns. "Australian Pherosphaera"
 Contrib. N.S.W. Nat. Herb., l.c., 355 (1951) = *Pherosphaera fitzgeraldii*
 F. Muell. ex Hook., Ic. Pl. 14.64, t.1383 (1882).
 Australia: New South Wales, Blue Mountains.

- 2- *M. niphophilus* Gard. et Johns. "Tasmanian Pherosphaera"
 Contrib. N.S.W. Nat. Herb., l.c. 355 (1951) = *Pherosphaera hookeriana*
 Archer et Hook., Kew Journ. 2: 52 (1850).
 Australia: Tasmania, Lake Saint Clair.

NEOCALLITROPSIS Florin

(Cupressaceae)

Paleontographica 85(B): 590 (1944) = *Callitropsis* Compton, J. Linn.

Soc. 45: 432, t. 27 (1922).

- 1- *Neocallitropsis pancheri* (Carr.) De Laub. "Pancher Neocallitropsis"
Fl. Nouv. Caled. 4: 161 (1977) = *N. araucarioides* (Compton) Florin, J. Linn.
Soc., l.c. (1944).

S. New Caledonia: Yate Dam; Plaine des Lacs to Prony, 150-950 m.

PARASITAXUS De Laub.

(Podocarpaceae)

Fl. Nouv. Caled. 4: 44 (1972).

Parasitaxus is the only parasitic Conifer. It is distinguished by its succulent reddish scale-like leaves. The male cone looks similar to the Cupressaceae in general appearance. The female cone completely covers the seed, it does not have a separate fleshy receptacle and is born directly on a fertile shoot.

- 1- *P. ustus* (Vieill.) De Laub. "Red Parasitaxus"
Fl. Nouv. Caled., l.c. 44 (1972) = *Podocarpus ustus* (Vieill.) Brongn. et
Gris., Ann. Sci. Nat. Bot. Paris, ser. 5, 6: 243 (1866) = *Tacrydium*
ustum Vieill., Ann. Sci. Nat. Bot., ser. 4, 16: 56 (1861).
New Caledonia: Pouebo; Riviere Bleue; type from Poila, 400-1100 m.

PHYLLOCLADUS L.C. et A. Rich.

(Podocarpaceae)

Comment. Bot. Conif. Cycad. 129, t. 3, f. 12 (1826)

In his monograph Keng (1978) proposed *Phyllocladus* as a new family, namely as the *Phyllocladaceae*. Although *Phyllocladus* is a unique genus because of its odd leaves (phylloclads) its reproductive characteristics, including winged pollen grains and a receptacle covering the ovule, are typical characteristics of the *Podocarpaceae*.

- 1- *P. alpinus* Hook. f. "Mountain Celery Pine"
Fl. Novae-Zeland 1: 235, t. 53 (1853) = *P. asplenifolius* var. *alpinus*
(Hook. f.) Keng, J. Arn. Arb. 59: 263 (1978).
New Zealand: North and South Islands, 500-1900 m.
- 2- *P. asplenifolius* (Labill.) Hook. f. "Tasmanian Celery Pine"
Lond. J. Bot. 4: 151 (1845).
Australia: W. Tasmania, moist areas, 500-800 m.
- 3- *P. glaucus* Carr. "Blue Celery Pine"
Traite Gen. Conif. 52 (1855).
New Zealand: N.W. North Island, Auckland to Mt. Tarawera, 850-1000 m.
- 4- *P. hypophyllum* Hook. f. "Indonesian Celery Pine"
Ic. Pl., n.s. 5: t. 889 (1852) = *P. major* Pilg., Bot. Jahrb. 54: 211
(1916) = *P. protractus* (Warb.) Pilg., Pflanz. 18: 99 (1903).
E. Malaysia; E. Indonesia; Philippines; Papua New Guinea, 900-4000 m.

- 5- *P. trichomanioides* D. Don "Tanekaha Celery Pine"
 Lamb., Descr. Gen. Pinus. ed. 3.2:159 (1832) = *P. rhomboidalis* L.C. et
 A. Rich., De Conif. 23 (1826).
 New Zealand: North Island: North Cape; N. South Island, 0-1000 m.

PICEA Dietr.

(Pinaceae)

Fl. Geg. Berl. 2: 794 (1824).

Liu (1982) recognized thirty four species *Picea* in his monograph. However, Liu seemed to recognize too many infraspecific taxa and was apparently unaware of other recent taxonomic treatments including Cheng et Fu (1978) and Page et Rushforth (1980).

- 1- *P. abies* (L.) Karst. "Norway Spruce"
 Dtsch. Fl. Pharm.-Med. Bot. 325, f. 155 (1881) = *P. abies* var.
acuminata (Beck.) Dall. et Jacks. ex Harr., Handb. Conif. et Ginkg.
 335 (1966) = *P. abies* var. *europaea* (Tepf.) Jurk. et Parf., Bjull.
 Glavn. Bot. Sada An SSR 64: 42 (1967).
 C. Europe; Scandinavia; W. USSR, to 2300 m.
- 2- *P. asperata* Mast. "Dragon Spruce"
 J. Linn. Soc. Lond. Bot. 37: 419 (1906) = *P. asperata* var. *notabilis*
 Rehd. et Wils. ex Sarg., Pl. Wilson. 2:23 (1914) = *P. asperata* var.
ponderosa Rehd. et Wils. ex Sarg., l.c. (1914) = *P. aurantiaca*
 Mast., l.c. 420 (1906) = *P. retroflexa* Mast., l.c. 420 (1906).
 China: Kansu; Szechuan; Shensi, 2400-3900 m.
- 3- *P. bicolor* (Maxim.) Mayr. "Alcock Spruce"
 Monogr. Abiet. Jap. Reich. 49, t.3, f.8 (1890) = *P. alcockiana*
 Parl., DC Prodr. 16 (2): 431 (1868).
 Japan: C. Honshu, subalpine areas, 700-2180 m.
- 4- *P. brachytyla* (Franch.) Pritz. "Northern Sargent
 Spruce"
 Bot. Jahrb. 29: 216 (1901) = *P. sargentiana* Rehd. et Wils. ex Sarg.,
 Pl. Wilson. 2:23 (1914).
 China: Kansu; W. Szechuan; Shensi; W. Hupeh, 1500-3500 m.
- 4b- *P. brachytyla* var. *complanata* (Mast.) Cheng. ex Hu "Southern Sargent
 Spruce"
 Proc. Fifth Pacif. Sci. Congr. 4:3277 (1934)
 China: Tibet; Yunnan; Szechuan, 2000-3800 m.
- 5- *P. breweriana* S. Wats. "Brewer Spruce"
 Proc. Am. Acad. Arts Sci. 20: 378 (1855).
 U.S.A.: S.W. Oregon; N.W. California: Siskiyou Mts., 1006-2286 m.
- 6- *P. chihuahuana* Mart. "Chihuahuan Spruce"
 An. Inst. Biol., Mex. 13: 31 (1942).
 Mexico: Chihuahua to Durango: W. Sierra Madre, 2300-3200 m.

- 7- *P. crassifolia* Kom. "Tsinghai Spruce"
Not. Syst. Herb. Hort.-Bot. Petrop. (Bot. Mat.) 4: 177 (1923).
China: Tsinghai, S. Tsi-Lien-Shan; N. Kansu, Holan-Shan; Inner Mongolia, Ningsia Hui, 2600-3100 m.
- 8- *P. englemannii* (Parry) Engelm. "Englemann Spruce"
Trans. Acad. Sci. St. Louis 2: 212 (1863).
S.W. Canada; U.S.A.: Washington to W. Montana south to E. New Mexico, 619-3659 m.
- 8b- *P. englemannii* var. *mexicana* (Mart.) Silba, comb. nova. "Mexican Spruce"
Synonymy: *P. mexicana* Mart., An. Inst. Biol., Mex. 32 (1-2): 137 (1962)= *P. englemannii* subsp. *mexicana* (Mart.) Taylor et Patters., Taxon 29(4): 438 (1980), nom. illegit. basionym not fully cited.
Mexico: Coahuila; Saltillo and Nuevo Leon, to 2700 m.
- 9- *P. farreri* Page et Rushforth "Burman Spruce"
Notes Roy. Bot. Gard. Edinb. 38(1): 130, f.1-3 (1980).
N. Burma: Feng-Shui Ling Valley, 2438-2591 m.
- 10- *P. gemmata* Rehd. et Wils. ex Sarg. "Tapao-Shan Spruce"
Pl. Wilson. 4: 28 (1914).
China: W. Szechuan, Tapao-Shan, 2200-3600 m.
- 11- *P. glauca* (Moench.) Voss. "White Spruce"
Mitt. Dtsch. Dendrol. Ges. 16: 93 (1907)= *P. glauca* var. *porsildii* Raup., Sargentia 6: 102, pl. 12 (1947).
Canada; N. United States; Minnesota to Maine, 610-1700 m.
- 11b- *P. glauca* var. *albertiana* (S. Brown) Sarg. "Alberta Spruce"
Bot. Gaz. 67: 208 (1919).
S.W. Canada; U.S.A.: Montana to Wyoming, Rocky Mts.
- 12- *P. glehnii* (Fr. Schmidt) Mast. "Sakhalin Spruce"
Gard. Chron. n.ser.13: 300, f.54 (1880).
U.S.S.R.: S. Sakhalin; Japan: N. Honshu; E. Hokkaido, 0-1600 m.
- 13- *P. jezoensis* (Sieb. et Zucc.) Carr. "Yezo Spruce"
Tr. Conif. 255 (1855)= *P. ajanensis* Fisch. ex Trautv. et Mey., Midden-dorf's Reise Sibir. 1(2): 87, t. 22-24 (1856)= *P. komarovii* V. Vassil, Bot. J. URSS 35 (5): 504, f.5,7 (1950).
N.E. China; Korea; U.S.S.R.: Siberia; Japan: Hokkaido, 1000-1300 m.
- 13b- *P. jezoensis* var. *hondoensis* (Mayr.) Rehd. "Hondo Spruce"
Mitt. Deutsch. Dendrol. Ges. 1915 (24): 314 (1915)= *P. jezoensis* var. *microsperma* (Lindl.) Cheng et Fu, Fl. Reip. Pop. Sin. 7: 159 (1978).
Japan: C. Honshu, subalpine areas, 1100-2650 m.
- 14- *P. koraiensis* Nakai "Northern Korean Spruce"
Bot. Mag. Tokyo 33: 195 (1919)= *P. koyamai* var. *koraiensis* (Nakai) Liou et Wang, Illus. Man. Wood. Pl. N.E. Prov. 88, pl.4, no.14 (1955).
N.E. China; N. Korea; U.S.S.R.: Ussuri, 400-1800 m.

- 14b- *P. koraiensis* var. *intercedens* (Nakai) T. Lee "Southern Korean Spruce"
 Ill. Woody Pl. Kor. 5 (1966-69).
 Endemic to central and south Korea.
- 15- *P. koyamai* Shirasawa "Koyama Spruce"
 Bot. Mag. Tokyo 27: 127, pl.2, no. 28-35 (1913).
 Japan: C. Honshu, Mt. Yatsuga-dake, 1500-2000 m.
- 16- *P. likiangensis* (Franch.) Pritz. "Southern Likiang Spruce"
 Bot. Jahrb. 29: 217 (1900)= *P. likiangensis* var. *linzhiensis* Cheng et
 L.K. Fu, Acta Phytotax. Sin. 13(4): 83 (1975)= *P. yunnanensis* Hort. ex
 Wils., J. Arn. Arb. 7: 47 (1926).
 China: Tibet; N.W. Yunnan; S.W. Szechuan, 2500-3900 m.
- 16b- *P. likiangensis* var. *balfouriana* (Rehd. et Wils.) Hillier ex Slavin
 "Balfour Spruce"
 Rep. Conf. Roy. Hort. Soc. 86-150 (1932)= *P. likiangensis* var.
hirtella (Rehd. et Wils.) Cheng ex Chen, Taxon. Chin. Trees. 40
 (1937)= *P. likiangensis* var. *rubescens* Rehd. et Wils., Sarg. Pl.
 Wilson. 2: 31 (1914).
 China: S. Tsinghai; N.W. Yunnan, Likiang Snow Range; W. Szechuan,
 Kangting, 3600-4100 m.
- 16c- *P. likiangensis* var. *montigena* (Mast.) Cheng ex Chen
 "Northern Likiang Spruce"
 Taxon. Chin. Trees. 40 (1937)= *P. montigena* Mast., Gard. Chron. ser.
 3.39. 146, f.56 (1906).
 China: N.W. Yunnan, Likiang; W. Szechuan, Kangting, 3600-4000 m.
- 17- *P. mariana* (Mill.) B.S.P. "Black Spruce"
 Prel. Cat. Anth. Pter. N.Y. 71 (1888).
 Canada; U.S.A.: Alaska; Minnesota to Maine, 600-1524 m.
- 18- *P. maximowiczii* Regel ex Mast. "Maximowicz Spruce"
 Gard. Chron. 13: 363 (1880).
 Japan, Mount Fujiyama.
- 18b- *P. maximowiczii* var. *senanensis* Hayashi "Senan Spruce"
 Nitzl. Geh. Erl. Abb. 43 (1969).
 Japan: Honshu, Mts. Fuji San and Yatsuga-dake, 1100-2000 m.
- 19- *P. meyeri* Rehd. et Wils. ex Sarg. "Meyer Spruce"
 Pl. Wilson. 2: 28 (1914).
 China: Shansi; Hopei; Inner Mongolia, 1600-2700 m.
- 20- *P. morrisonicola* Hayata "Formosan Spruce"
 J. Coll. Sci. Univ. Tokyo 25(19): 220, f. 10 (1908).
 Taiwan; Mount Morrison, 1900-2800 m.
- 21- *P. neoveitchii* Mast. "Hupeh Spruce"
 Gard. Chron. ser.e. 33: 116, f.50,51 (1903).
 China: S. Kansu; S. Shensi; W. Hupeh, 1300-2000 m.

- 22- *P. obovata* Ledeb. "Siberian Spruce"
Fl. Alt. 4: 201 (1833)= *P. obovata* var. *alpestris* (Bruegg.) Henry
ex Elwes, Tr. Grt. Brit. et Irel. 6: 1360 (1912).
N. Europe; U.S.S.R. to N.E. China, Shansi, 1200-1800 m.
- 22b- *P. obovata* var. *fennica* (Reg.) Henry ex Elwes "Scandinavian Spruce"
Tr. Grt. Brit. et Irel. 6: 1360 (1912).
S. Sweden; S. Norway to near Leningrad, U.S.S.R.
- 23- *P. omorika* (Pancic) Purk. "Serbian Spruce"
Oestr. Monatschr. Forstw. 27: 446 (1877).
Yugoslavia, Drina Valley, 800-1600 m.
- 24- *P. orientalis* (L.) Link "Oriental Spruce"
Linnea 20: 294 (1847).
Turkey: N.E. Anatolia and Caucasus.
- 25- *P. polita* (Sieb. et Zucc.) Carr. "Tigertail Spruce"
Tr. Conif. ed.1: 256 (1855)= *P. torano* E. Koehne, Deutsche Dendrol.
22 (1893).
Japan: Honshu: Shikoku and Kyushu, 400-1850 m.
- 26- *P. pungens* Engelm. "Colorado Spruce"
Gard. Chron., New Ser. 11: 334 (1879).
U.S.A.: S. Idaho to W. New Mexico, Rocky Mts., 1829-3353 m.
- 27- *P. purpurea* Mast. "Purple-cone Spruce"
J. Linn. Soc. Bot. 37: 418 (1906)= *P. likiangensis* var. *purpurea*
(Mast.) Dallim. et Jacks., Handb. Conif. 334 (1923).
China: C. & S.W. Kansu; N.W. Szechuan; E. Tsinghai, 2600-3800 m.
- 28- *P. rubens* Sarg. "Red Spruce"
Silva No. Am. 12: 33, pl.597 (1898).
S.E. Canada; E. Quebec to E. United States, to N. Georgia, 1000-1500 m.
- 29- *P. schrenkiana* Fisch. et Mey. "Schrenk Spruce"
Bull. Acad. Sci. St. Petersburg. 10: 253 (1842)= *P. prostrata* Isakov,
Fl. Kirgiz. SSR 10: 374 (1962).
U.S.S.R.: Kirghiz; China: Sinkiang Uighur, 1400-3600 m.
- 29b- *P. schrenkiana* var. *tianschanica* (Rupr.) Cheng et S.H. Fu
"Tien-Schan Spruce"
Fl. Reip. Pop. Sin. 7: 146 (1978); Ill. Fl. China 1: 300 (1980).
U.S.S.R.: Kirghiz, Talass Ala-Tau; China: Sinkiang Uighur.
- 30- *P. shirasawae* Hayashi "Shirasawa Spruce"
Nitzl. Geh. Erl Abb. 43 (1969)= *P. bicolor* var. *acicularis* Sh. et Koy.,
Bot. Mag. Tokyo 27: 129 (1913).
Japan: Honshu, W. Mount Yatsuga-dake, 1200-1950 m.
- 31- *P. sitchensis* (Bong.) Carr. "Sitka Spruce"
Tr. Gen. Conif. 260 (1855).
S.W. Canada; U.S.A.: S. Alaska to N.W. California, 366-914 m.

- 32- *P. smithiana* (Wall.) Boiss. "West Himalayan Spruce"
 Fl. Orient. 5: 700 (1884) = *P. morinda* (Loud.) Link, Linnaea 15: 522
 (1841).
 Afghanistan; India; Nepal; S.W. China: Tibet, 2400-3600 m.
- 33- *P. spinulosa* (Griff.) Henry "East Himalayan Spruce"
 Gard. Chron. ser.3.39: 219 (1906).
 Sikkim; Bhutan; China: S.E. Tibet, 2400-3600 m.
- 34- *P. wilsonii* Mast. "Wilson Spruce"
 Gard. Chron. ser.3.33:133, f.55-56 (1903).
 China: Tsinghai to W. Hupeh, 1400-2800 m.

PILGERODENDRON Florin (Cupressaceae)

Svensk. Bot. Tidskr. 24: 132 (1930).

Gaussen (1968) recognized *Pilgerodendron* as a monotypic genus.

- 1- *P. uviferum* (Pilg.) Florin "Patagonian Pilgerodendron"
 Svensk. Bot. Tidskr. 24: 1333 (1930) = *Libocedrus uvifera* Pilg. ex
 Engl. et Prantl., Die Naturl. Pflanzenf. ed. 2. 389 (1926).
 Chile: Valdivia to Tierra del Fuego, S. Argentina, 600-1100 m.

PINUS L. (Pinaceae)

Sp. Pl. 1000 (1753).

Ninety-three species and thirty-five varieties of *Pinus* are accepted here. Although the taxonomic treatment is somewhat different Critchfield and Little (1966) accept 94 species of *Pinus*. Pravdin (1969) recognizes five subspecies of *P. sylvestris*; only four are accepted here. In the past few years French and American botanists have named new taxa from Mexico, some of which are mere variants of *P. cembroides* not worth recognizing.

- 1- *P. albicaulis* Engelm. "Whitebark Pine"
 Acad. Sci. St. Louis Trans. 2: 209 (1863).
 S.W. Canada; W. United States, 1372-3658 m.
- 2- *P. aristata* Engelm. ex Parry et Engelm. "Eastern Bristlecone Pine"
 Am. J. Sci. Arts, ser.2,34: 331 (1862).
 U.S.A.: W. Colorado; N. New Mexico; N. Arizona, 2500-3400 m.
- 2b- *P. aristata* var. *longaeva* (D.K. Bailey) Little "Western Bristlecone Pine"
 Phytologia 42:221 (1979) = *P. longaeva* Bailey, Ann. Mo. Bot. Gard.
 et For. 57: 243, f.23 (1970).
 U.S.A.: C. Utah; S. Nevada, E. California, 1700-3400 m.

- 3- *P. armandii* Franch. "Armand Pine"
Paris Mus. Hist. Nat. Nouv. Arch. ser.2.7: 95-96, t.12 (Pl. David 1: 285)
(1884)= *P. amamiana* Koidzu, Bot. Mag. Tokyo 38: 113 (1924)= *P. dabeshanensis* Cheng et Law, Acta Phytotax. Sin. 13(4): 85, pl.26,6-10 (1975)=
P. masteriana Hayata, Gard. Chron. ser.3.43 194 (1908).
N.E. India; N. Burma; C. China; E. Taiwan; S. Japan, 600-3300 m.
- 4- *P. attenuata* Lemm. "Knobcone Pine"
Mining et Sci. Press 64: 45 (1892).
U.S.A.: S.W. Oregon; W. California; Mexico: N. Baja California, 305-1219 m.
- 5- *P. ayacahuite* Ehrenb. ex Schlecht. "Mexican White Pine"
Linnea 12: 492 (1838)= *P. ayacahuite* var. *veitchii* Shaw, Pines of
Mexico. 10. pl.5 (1909).
S.E. Mexico: W. Vera Cruz to C. Chiapas; S. Guatemala; N.W. El Salvador;
W. Honduras, to 3050 m.
- 6- *P. balfouriana* Grev. et Balf. ex A. Murr. "Northern Foxtail Pine"
Bot. Exped. Oreg. (Rep. no.8) no.618, t. (1853).
U.S.A.: N. California, W. Siskiyou, E. Trinity and W. Tehama Counties,
1829-3505 m.
- 6b-*P. balfouriana* var. *austrina* (Mastrog. et Mastrog) Silba, comb. nova.
"Southern Foxtail Pine"
Synonymy: *P. balfouriana* subsp. *austrina* Mastrog. et Mastrog., Syst.
Bot. 5(1): 102 (1980).
U.S.A.: C. California; E. Tulare, S. Fresno and W. Inyo Counties.
- 7- *P. banksiana* Lamb. "Jack Pine"
Descr. Gen. Pinus 1: 7, t.3 (1803).
C. Canada: S. Mackenzie to Nova Scotia; N.E. United States: Minnesota
to Maine, 350-850 m.
- 8- *P. bhutanica* Grierson, Long et Page "Eastern Himalayan Pine"
Notes R.B.G. Edinb. 38(2): 299-300 (1980).
E. Bhutan: Kenga to Lao; N.E. India: Arunachal Pradesh, 1750-2400 m.
- 9- *P. brutia* Ten. "Calabrian Pine"
Prodr. Fl.Nap. 1: 72 (1811)= *P. halepensis* var. *brutia* Henry ex
Elwes, Tr. Grt. Brt. et Irel. 5: 1100 (1910).
E. Greece: W. Turkey; N.W. Iraq; W. Syria; Lebanon.
- 9b- *P. brutia* var. *eldarica* (Medw.) Magini et Tulstr. "Eilar Pine"
Tr. Seed Notes, FAO For. Develop. Pap. 5 (1955)= *P. eldarica* Medw.,
Act. Hort. Tifl. 6.2.21,f. (1903).
U.S.S.R.: E. Georgian SSR, Mt. Eilar Ugi.
- 9c- *P. brutia* var. *pithyusa* (Stev.) Magini et Tulstr. "Black Sea Pine"
Tr. Seed Notes, FAO For. Develop. Pap. 5 (1955)= *P. pithyusa*
Stev., Bull. Soc. Hist. Nat. Moscou 11: 49 (1838)= *P. stankoviczii*
(Suk.) Fomin, Monit. du Jard. Bot. de Tifl. 34: 21 (1914).
U.S.S.R.: S.E. Ukraine, Yalta eastwards.

- 10- *P. bungeana* Zucc. ex Endl. "Lacebark Pine"
Syn. Conif. 166 (1847).
China: E. Szechuan to C. Shansi, 500-1800 m.
- 11- *P. canariensis* C. Smith ex Buch. "Canary Island Pine"
Phys. Besch. Canar. Ins. 159 (1825).
Endemic to the Canary Islands; Teneriffe and Grand Canary Island,
1524- 2195 m.
- 12- *P. caribea* Morelet "Caribbean Pine"
Rev. Hort. Cote d'Or. 1: 107 (1851).
W. Cuba, Pinar del Rio.
- 12b- *P. caribea* var. *bahamensis* (Griseb.) Barr. ex Golf. "Bahaman Pine"
Carib. For. 23: 69, figs. (1962).
Bahama Islands: Grand Bahamas; Andros Island.
- 12c- *P. caribea* var. *hondurensis* (Seneccl.) Barr. ex Golf. "Honduran Pine"
Carib. For. 23: 65, figs (1962).
E. Guatemala; British Honduras; Honduras; Nicaragua.
- 13- *P. cembra* L. "Swiss Stone Pine"
Sp. Pl. 1000 (1753).
Central Europe: S.E. France to W. U.S.S.R.: W. Ukraine.
- 14- *P. cembroides* Zucc. ex K. Bayer "Mexican Pinyon Pine"
Akad. Wiss. Munchen. Abhandl. Math.-Phys. 1:392 (1832) = *P. cembroides*
var. *lagunae* Rob.-Pass., Bull. Mus. Hist. Nat. ser.4,3: 64 (1981)=
P. cembroides subsp. *orizabensis* D. K. Bailey, Phytologia 54(2): 89-90,
(1983) = *P. discolor* Bailey et Hawksw., Phytologia 44(3): 130 (1979)
= *P. johannis* M.F. Rob., Adansonia ser.2,18, fasc. 3: 366-367, f.2-4
(1978).
S.W. United States to N. Mexico, 762-2700 m. See note on page 79.
- 14b- *P. cembroides* var. *quadrifolia* (Parl. ex Sudw.) De Laub. et Silba, comb. nova
"Parry Pinyon Pine"
Synonymy: *P. quadrifolia* Parl. ex Sudw., A. DC Prodr. 16(2): 302
(1868)= *P. juarezensis* Lanner, Southw. Nat. 19: 75, f.2 (1974).
U.S.A.: S. California to N. Baja California, Mexico.
- 14c- *P. cembroides* var. *remota* Little "Papershell Pinyon Pine"
Wrightia 3: 183 (1966)= *P. catarinae* Robert-Passini, Bull. Mus. Hist.
Nat. ser.4,3: 70, f. (1981).
U.S.A.: S.W. Texas; Mexico: Coahuila and Neuvo Leon, 1100-1400 m.
- 15- *P. clausa* (Chapm. ex Engelm.) Vasey ex Sarg. "Southern Sand Pine"
U.S. Census. 10th. 1880. v.9 (Rep. For. No. Am.): 199 (1844).
U.S.A.: N.E. Florida, Ocala to S. Florida, to 61 m.
- 15b- *P. clausa* var. *immuginata* D.B. Ward "Northern Sand Pine"
Castanea 28: 4 (1963).
U.S.A.: S. Alabama, Baldwin County to Choctawhatchee, N.W. Florida.

- 16-*P. contorta* Dougl. ex Loud. "Shore Pine"
Arb. Frut. Brit. 4: 2292, f. 2210-2211 (1838) = *P. contorta* var.
bolanderi Lemmon, Erythea 2: 176 (1894).
W. Canada; N.W. United States, along the Pacific Coast, 0-610 m.
- 16b-*P. contorta* var. *latifolia* Engelm. ex Wats. "Rocky Mountain Lodgepole
King, Rep. U.S. Geol. Expl. 40th Par. 5: 331 (1871). Pine"
S. Canada to S. Colorado, U.S.A., Rocky Mountains, 457-3505 m.
- 16c-*P. contorta* var. *murrayensis* (Grev. et Balf.) Engelm. "Sierra Lodgepole
ex Wats., Bot. Calif. 2: 126 (1879). Pine"
U.S.A.: S.W. Oregon to N. Baja California, Mexico, 457-3505 m.
- 17- *P. cooperi* Blanco "Cooper Pine"
Mex. Inst. Biol. An. 20: 185, f. 1 (1949) = *P. lutea* Blanco, Las
Pinac. Mex. 233 (1945).
W. Mexico: S.W. Chihuahua to W. Durango, 2438-2743 m.
- 17b- *P. cooperi* var. *ornelasi* (Mart.) Blanco "Ornelas Pine"
An. Inst. Biol. Mex. 20: 183 (1950).
Mexico: Durango, El Salto (type).
- 18- *P. coulteri* D. Don "Coulter Pine"
Linn. Soc. Lond. Trans. 17: 440 (1836).
U.S.A.: S.W. California to N. Baja California, Mexico, 305-2134 m.
- 19- *P. culminicola* Andr. et Beam. "Potosi Pinyon Pine"
J. Arn. Arb. 42: 438, f. 2-4 (1961).
Mexico: W. Nuevo Leon, Cerro Potosi, 3353-3658 m. See note on page 79.
- 20- *P. densa* (Little et Dorm.) De Laubenfels et Silba, comb. nova.
"Dade Pine"
Synonymy: *P. elliotii* var. *densa* Little et Dorm., J. For. 50: 921,
f. 1, 2 (1952) = *P. densa* (Little et Dorm.) Gaussen, Trav. Lab. For.
Toul., Tome 2, vol. 1, fasc. 6, ch. 11 (1960) nom. illegit., basio-
nym not fully cited.
U.S.A.: S. Florida, Dade County to Florida Keys.
- 21- *P. densiflora* Sieb. et Zucc. "Japanese Red Pine"
Fl. Jap. 2: 22, t. 112 (1844).
N.E. China: Manchuria; E. Korea; Japan, 800-920 m.
- 21b- *P. densiflora* var. *funnebris* (Kom.) Liou et Wang "Sikhote Red Pine"
Illus. Fl. Lign. Pl. N.E. China 98. 546 (1955) = *P. funnebris* Kom.,
Acta Hort. Petrop. 20: 117 (1901).
N.E. Korea; N.E. China: S.E. Kirin; U.S.S.R.: Sikhote Alin Mts.,
500-1600 m.
- 22- *P. douglasiana* Mart. "Douglas Pine"
Madrono 7: 4, t. 1 (1943); An. Inst. Biol., Mex. 17: 4, t. 1 (1943).
= *P. martinezii* E. Larson, Madrono 17: 217 (1964).
W. Mexico: S.E. Sonora to S. Mexico D.F., 1830-2700 m.

- 23- *P. durangensis* Mart. "Durango Pine"
An. Inst. Biol., Mex. 13: 23, f.1-4 (1942)
W. Mexico: E. Sonora to N. Michoacan.
- 24- *P. echinata* Mill. "Shortleaf Pine"
Gard. Dict. ed.8, Pinus no. 12 (1768).
E. United States: S.E. New York to N.W. Florida to W. Texas, 1100-3300 m.
- 25- *P. elliotii* Engelm. "Slash Pine"
Acad. Sci. St. Louis Trans. 4: 186, t.1-3 (1880).
U.S.A.: E. Louisiana to N. Florida to S. South Carolina, 0-152 m.
- 26- *P. engelmannii* Carr. "Apache Pine"
Rev. Hort. ser.4,3: 227 (1854)= *P. arizonica* var. *stormiae* Mart.,
Las Pinac. Mex. 295, f. 241-243 (1948)= *P. engelmannii* var. *blancoi*
(Mart.) Mart., l.c. 288 (1948).
U.S.A.: S.E. Arizona to S.W. Zacatecas, Mexico, 1524-2499 m.
- 27- *P. estevesii* (Mart.) Perry "Esteves Pine"
J. Arn. Arb. 63: 187 (1982)= *P. pseudostrobus* var. *estevesii* Mart.,
Las Pinac. Mex. 196, f. 158-9 (1948).
Mexico: S. Neuvo Leon; S.E. Coahuila; S.W. Tamaulipas, 800-1500 m.
- 28- *P. fenzeliana* Hand.-Mzt. "Fenzel Pine"
Oesterr. Bot. Zeitschr. 80: 337 (1931).
China: N.E. Kwangsi; N.W. Kwangtung; S.E. Hunan also on Hainan Island;
C. Vietnam, 1000-1600 m.
- 29- *P. flexilis* James "Limber Pine"
Exped. Rocky Mts. 2: 27,35 (1823).
S. Canada; W. United States, Rocky Mountains, 1524-3658 m.
- 30- *P. gerardiana* Wall. ex D. Don "Chilgoza Pine"
Lamb. Descr. Gen. Pinus ed.3 (8), vol.2.t.79.144-145 (1832).
E. Afghanistan; N. West Pakistan; N. India; China: S.W. Tibet, 1600-
3300 m.
- 31- *P. glabra* Walt. "Spruce Pine"
Fl. Carol. 237 (1738).
U.S.A.: E. Louisiana to N. Florida to S. South Carolina, to 152 m.
- 32- *P. greggii* Engelm. ex Parl. "Gregg Pine"
DC. Prodr. 16(2): 396 (1868)
E. Mexico: S.E. Coahuila; W. Neuvo Leon; S.E. San Luis Potosí to
W. Vera Cruz.
- 33- *P. halepensis* Mill. "Aleppo Pine"
Gard. Dict. 8th ed. Pinus no.8 (1768)= *P. maritima* Lamb.,
Gen. Pin. 1.13,t.10 (1803).
Mediterranean Region, widespread.
- 34- *P. hartwegii* Lindl. "Hartweg Pine"
Bot. Reg. v.25 Misc. 62 (1839) = *P. montezumae* var. *hartwegii*

Engelm., Trans. St. Louis Acad. Sci. 4. 177 (1880) = *P. rudis* Endl., Syn. Conif. 151 (1847).

Mexico: central and southern areas; S. Guatemala; N.W. El Salvador, 2438-3800 m.

- 35- *P. heldreichii* Christ "Heldreich Pine"
Naturf. Gesell. Basel. Verhandl., n.s. 3: 549 (1863).
S.W. Bulgaria; N.E. Greece, Balkan Mountains.
- 35b- *P. heldreichii* var. *leucodermis* (Ant.) Markgraf. ex Fitch "Bosnian Pine"
Handb. Nadelh. 3: 404 (1930) = *P. leucodermis* Ant., Oestr. Bot. Zeitschr. 14: 366 (1868).
W. Yugoslavia; Albania; N.W. Greece.
- 36- *P. insularis* Endl. "Khasi Pine"
Syn. Conif. 157 (1847) = *P. kesiya* Royle ex Gord., Loud., Gard. Mag. 16.8 (1840), nom. illegit. = *P. khasyanus* Griff., Notul. Pl. Asiat. 4.18 (1854), nom. illegit. = *P. langbianensis* A. Cheval., Rev. Bot. Appl. Agr. Trop. nos. 269-271: 25 (1944) = *P. szemaoensis* Liang, Cat. China Tr. Seed Co. Peking. (1982), nom. nud.
N.E. India; S.E. China; N. Burma to S. Vietnam; N.W. Philippines, 800-2300 m.
- 36b- *P. insularis* var. *yunnanensis* (Franch.) Silba, comb. nova. "Yunnan Pine"
Synonymy: *P. yunnanensis* Franch., J. de Bot. 13: 253 (1899).
China: S. Szechuan to N.W. Kwangsi, 2200-3250 m.
- 37- *P. jaliscana* Perez de la Rosa "Jalisco Pine"
Phytologia 54(5): 290-291, f. 1 (1983).
Mexico: N.W. Jalisco, El Tuito to Mascota, 850 -1650 m.
- 38- *P. jeffreyi* Grev. et Balf. ex A. Murr. "Jeffrey Pine"
Bot. Exped. Oreg. (Rep. no.8) 2, t. (1853).
U.S.A.: S.W. Oregon to N. Baja California, Mexico, 1067- 3048 m.
- 39- *P. koraiensis* Sieb. et Zucc. "Korean Pine"
Fl. Jap. 2: 28, t. 116, f. 5-6 (1844).
E. Korea; N.E. China; E. U.S.S.R.; C. Japan.
- 40- *P. krempfii* Lecompte "Krempf Pine"
Paris Mus. Natl. d'Hist. Bull. 27: 191, f. (1921) = *P. krempfii* var. *poilanei* Lecompte, l.c. (1921) = *Ducampopinus krempfii* (Lecompte) A. Chevalier, Rev. Bot. Appliq. 24: 30-31 (1944).
S. Vietnam, between Dalat and Nhatrang, 1300-2000 m.
- 41- *P. lambertiana* Dougl. "Sugar Pine"
Linn. Soc. Lond. Trans. 15: 500 (1827).
U.S.A.: W. Oregon to N. Baja California, Mexico, 335-3200 m.
- 42- *P. lawsonii* Roetzl. ex Gord. "Lawson Pine"
Pinet. Suppl. 64 (1862).
S. Mexico: W. Jalisco to E. Oaxaca.

- 43- *P. leiophylla* Schiede et Deppe "Smooth-leaf Pine"
Schlecht. et Cham., Linnaea 6: 354 (1832).
Mexico: E. Sonora to W. Oaxaca, 1524-2600 m.
- 43b- *P. leiophylla* var. *chihuahuana* (Engelm.) Shaw "Chihuahua Pine"
Pines Mex. 14, pl. 7, f. 10-11 (1909) = *P. chihuahuana* Engelm.,
Wisliz. Mem. Tour. N. Mexico. 103 (1848).
U.S.A.: S.E. Arizona to S. Zacatecas, Mexico, 2134-2438 m.
- 44- *P. luchuensis* Mayr. "Luchu Pine"
Bot. Centralbl. 58: 149, f. (1894) = *P. hwangshanensis* Hsia ex
Tsoong, Peiping Natl. Acad. Inst. Bot. Contrib. 4: 155 (1936)
= *P. taiwanensis* Hayata, Tokyo Col. Sci. Journ. 30 (art.1) : 307
(1911).
S.E. China: E. Taiwan; S. Japan, Ryukyu Islands, 600-2800 m.
- 45- *P. lumholtzii* Robins. et Fern. "Lumholtz Pine"
Amer. Acad. Proc. 30: 122 (1894).
W. Mexico: S.E. Sonora to W. Jalisco, 1830-2438 m.
- 46- *P. massoniana* Lamb. "Masson Pine"
Descr. Gen. Pinus 1: 17, t.12 (1803) = *P. massoniana* var.
hainanensis Cheng et Fu, Acta Phytotax. Sin. 13(4): 85 (1975).
C. China; N. Taiwan; N.E. Vietnam, 300-1500 m.
- 46b- *P. massoniana* var. *henryi* (Mast.) Wu "Henry Pine"
Acta Phytotax. Sin. 5(3): 153, pl.24, illus. 14 (1956).
China: E. Szechuan; W. Hupeh; S. Shensi, 1150-2000 m.
- 47- *P. maximartinezii* Rzedowski "Bigcone Pinyon Pine"
Ciencia, Mexico 23: 17, f.1-3, t.2 (1964).
Mexico: S.E. Zacatecas, near Juchipila, 1700-2100 m.
- 48- *P. merkusii* Jungh. et de Vriese "Merkus Pine"
Pl. Nov. Ind. Bat. Or. 5, t.2 (1845) = *P. latteri* Mason, J. Asiat.
Soc. Bengal. Sci. 5(18): 73-75 (1849).
E. Burma to S. Vietnam; Indonesia: N. Sumatra; E. Philippines, 300-900 m.
- 49- *P. michoacana* Mart. "Michoacan Pine"
Mex. Inst. Biol. An. 15: 1, f.1-4 (1944) = *P. michoacana* var. *cornuta*
Mart., l.c. (1944).
Mexico: S. Zacatecas to N. Chiapas, 914-2700 m.
- 49b- *P. michoacana* var. *quevedoi* Mart. "Quevedo Pine"
Mex. Inst. Biol. An. 14: 1 (1944).
Mexico: S.W. San Luis Potosi, 2134-2286 m.
- 50- *P. monophylla* Torr. et Frem. "Single-leaf Pinyon Pine"
Rep. Explor. Exped. Rocky Mts. 319, pl.4 (1845) = *P. cembroides* var.
monophylla (Torr. et Frem.) Voss., Dtsch. Gartenrat. Beil. 123 (1904)
= *P. edulis* var. *fallax* Little, Phytologia 17: 331 (1968).
U.S.A.: S. Idaho to N. Baja California, Mexico, 1067-2134 m.

- 50b- *P. monophylla* var. *edulis* (Engelm.) M.E. Jones "Colorado Pinyon Pine"
 Zoe 2: 251 (1891) = *P. edulis* Engelm., Wislitz. Mem. Tour. North.
 Mex. 88 (1848).
 U.S.A.: S. Wyoming to S.W. Texas, Rocky Mts., 1524-2134 m.
- 51- *P. montezumae* Lamb. "Montezuma Pine"
 Descr. Gen. Pinus ed. 3 (8). 1: 39, t.22 (1832) = *P. montezumae* var.
lindleyi Loud., Encycl. Tr. et Shrubs. 1004 (1883) = *P. montezumae* f.
macrocarpa Mart., Las Pinac. Mexic. 217, f.174-175 (1948).
 E. Mexico: Neuvo Leon to C. Chiapas; S. Guatemala, 2438-3048 m.
- 52- *P. monticola* Dougl. ex D. Don "Western White Pine"
 Lamb., Descr. Gen. Pinus. ed.3 (8), v.2: 144-145 (1832).
 S. Canada: S. British Columbia to C. California, U.S.A., 1067-2987m.
- 53- *P. morrisonicola* Hayata "Formosan White Pine"
 Gard. Chron. ser.3. 43: 194 (1908) = *P. kwangtungensis* Chun et Tsiang,
 Sunyatsenia 7: 111 (1948).
 S.E. China: Kwangtung ; C. Taiwan: Mount Morrison, 500-2400 m.
- 54- *P. mugo* Turra "Scrub Mugo Pine"
 Gior. Ital. (Grisilini) 1: 152 (1764) = *P. mugo* var. *pumilio* Zen.,
 Bull. Soc. Bot. Ital. 65 (1921).
 C. Europe: E. Spain to Ukraine, U.S.S.R.
- 54b- *P. mugo* var. *rostrata* (Ant.) Gord. "Giant Mugo Pine"
 Pinet. 172 (1858); Hoopes, Book of Evergreens. 91 (1868)
 = *P. uncinata* Ramond ex De Candolle, Fl. Franc. 3: 736 (1805).
 C. Spain; S. France; Switzerland; N. Italy, 1600-2100 m.
- 55- *P. muricata* D. Don. "Bishop Pine"
 Linn. Soc. Lond. Trans. 17: 441 (1836) = *P. muricata* var. *cedrosensis*
 J. T. Howell, Lflts. West. Bot. 3: 7 (1941) = *P. muricata* var.
borealis Axelrod, Univ. Calif. Geol. Sci. 127 (1983) = *P. muricata*
 var. *stantonii* Axelrod, l.c. (1983) = *P. radiata* var. *binata* (Engelm.)
 Brewer et Wats., Bot. Calif. 2: 128 (1880) = *P. remorata* Mason,
 Madrono 2: 9 (1930).
 U.S.A.: W. California: N.W. Humboldt County to Guadalupe Island, Mexico.
- 56- *P. nelsonii* Shaw "Nelson Pinyon Pine"
 Gard. Chron. ser.3. 36: 122, f.49 (1904).
 E. Mexico: S. Coahuila to N. San Luis Potosi, to 2134 m.
- 57- *P. nigra* Arn. "Austrian Pine"
 Reise Mariaz. 8, cum. tab. (1785) = *P. x banatica* Georgescu et Ionescu,
 Fedde. Rep. 41: 183 (1936) = *P. laricio* Poiret, Lamarck, Encycl. Meth.
 5: 339 (1804) = *P. nigra* subsp. *croatica* Lovril, Osterr. Bot. Zeitschr.
 119(4-5): 569 (1971-2).
 E. Austria; N.E. Italy: Yugoslavia; W. Romania; Albania; Bulgaria; N. Greece.
- 57b- *P. nigra* var. *caramanica* (Loud.) Rehd. "Crimean Pine"
 Man. Cult. Tr. et Shr. 61 (1927).
 S. Greece; W. Turkey; S.W. Cyprus.
- 57c- *P. nigra* var. *cebennensis* (Gren. ex Godr.) Rehd. "Pyrenean Pine"
 J. Arn. Arb. 3: 208(1922).

N.E. Morocco; E. Spain; S. France, Pyrenean Mts.

- 57d- *P. nigra* var. *maritima* (Ait.) Melv. "Corsican Pine"
Kew Bull. 534 (1958).
S. France, Corsica; W. Italy to E. Sicily.
- 58- *P. oaxacana* (Mart.) Mirov "Oaxaca Pine"
Madrono 14: 145 (1958) = *P. pseudostrobus* var. *oaxacana* Mart., Las
Pinac. Mex. 195 (1945).
Mexico: Vera Cruz; Puebla; Guerrero; Mexico D.F.; Chiapas,.
- 59- *P. occidentalis* Sw. "West Indies Pine"
Nov. Gen. Sp. Pl. 103 (1788) = *P. maestrensis* Bisse, Ciencias, Bot.
(Cuba) 2: 2 (1975).
S. Cuba; Haiti; Dominican Republic, 150-3000 m.
- 59b- *P. occidentalis* var. *cubensis* (Sarg.) Silba, comb. nova "Cuban Pine"
Synonymy: *P. cubensis* Sarg. ex Griseb., Am. Acad. Mem. ser. 2, 8: 530
(1862).
E. Cuba: Oriente Province.
- 60- *P. oocarpa* Scheid. ex Schlecht. "Oocarpa Pine"
Linnea 12: 491 (1838) = *P. oocarpa* var. *manzanoi* Mart., An. Inst. Biol.,
Mex. 11, no.1: 70, f.11-13 (1940) = *P. oocarpa* var. *microphylla* Shaw,
Pines Mex. 27 (1909) = *P. oocarpa* f. *trifoliata* Mart., An. Inst. Biol.,
Mex. 17: 297 (1945) = *P. tecumumani* Schwerdtf., Entomol. For. Guatem.
1 (Pinos Guatem.) 39. 52 (1953).
Mexico; C. Guatemala; Honduras; N. El Salvador; N. Nicaragua, 1524-2500 m.
- 60b- *P. oocarpa* var. *ochotereneri* Mart. "Ochoterener Pine"
An. Inst. Biol., Mex. 11(1): 65, f.9-11, 13 (1940) = *P. patula* var.
longepedunculata Loock ex Mart., Las Pin. Mex. 334 (1948).
Mexico: Chiapas; Guatemala; British Honduras.
- 61- *P. palustris* Mill. "Longleaf Pine"
Gard. Dict. ed.8, Pinus no. 14 (1786).
U.S.A.: S.E. Texas to C. Florida to S.E. Virginia, 183-650 m.
- 62- *P. patula* Schiede et Deppe "Mexican Weeping Pine"
ex Schlecht et Cham., Linnea 6: 354 (1831).
E. Mexico: S. Tamaulipas to C. Oaxaca, 1830-3048 m.
- 63- *P. pentaphylla* Mayr. "Northern Japanese White Pine"
Monogr. Abiet. Jap. Reich. 78 (1890) = *P. parviflora* Sieb. et Zucc.,
Fl. Jap. 2: 27, t. 115 (1844), nom. illegit (lectotype illegit).
Endemic to northern Japan, north of Honshu.
- 63b- *P. pentaphylla* var. *himeokomatsu* (Miyabe et Kudo) Makino "Southern Japanese White Pine"
ex Hayashi, Nat. Distr. Imp. Tr. Ind. Jap. Conif., Rep. 3 Bull. Govt.
For. Exp. Sta. no. 75 (1954).
Endemic to southern Japan, Honshu southwards.
- 64- *P. peuce* Griseb. "Macedonian Pine"
Spicil. Fl. Rumel. et Byth. 2: 349 (1844).

S. Yugoslavia; E. Albania; S.W. Bulgaria; N. Greece.

- 65-*P. pinaster* Ait. "Maritime Pine"
Hort. Kew. 3: 367 (1789)= *P. maritima* Mill., Gard. Dict. ed. 8,
no.7 (1768)= *P. mesogeensis* Fiesch. et Gauss., Bull. Soc. Hist. Nat.
Toul. 64: 440 (1932).
Western Mediterranean region: E. Morocco to W. Italy.
- 66- *P. pinceana* Gord. "Pince Pinyon Pine"
Pinet. 204 (1858).
C. Mexico: S. Coahuila to C. Hidalgo.
- 67- *P. pinea* L. "Italian Stone Pine"
Sp. Pl. 1000 (1753).
Northern Mediterranean Region: Portugal to Lebanon.
- 68- *P. ponderosa* Dougl. ex Laws. "Ponderosa Pine"
Agr. Man. 354 (1836).
Canada: S. British Columbia to S. California, U.S.A.
- 68h *P. ponderosa* var. *arizonica* (Engelm.) Shaw "Arizona Pine"
Pines Mex. 24, pl.4, pl.17, f.4 (1909)= *P. arizonica* Engelm. ex Rothr.,
Wheeler, Bot. Rep. U. St. Geogr. Surv. 6: 260 (1878).
U.S.A.: S.E. Arizona to C. San Luis Potosi, 2134-2438 m.
- 69- *P. pringlei* Shaw "Pringle Pine"
Sarg., Tr. et Shr. 1: 211, t.100 (1905).
S. Mexico: N.Michoacan to C. Oaxaca, 1700-1900 m.
- 70- *P. pseudostrobus* Lindl. "Mexican White Pine"
Bot. Reg. v.25, Misc. 63 (1839)= *P. maximinoi* Moore, Baileya
14: 8. (1966)= *P. pseudostrobus* var. *coaptepecensis* Mart., Las Pinac.
Mex. 187 (1945)= *P. tenuifolia* Benth., Pl. Hartw. 92 (1842).
Mexico: W. Neuvo Leon to C. Chiapas; S. Guatemala; N. El Salvador;
S. Honduras; W. Nicaragua.
- 70h-*P. pseudostrobus* var. *alpulcensis* (Lindl.) Mart. "Alpulco Pine"
Las Pinac. Mex. 192 (1945).
Mexico: W. Vera Cruz; E. Hidalgo; N.W.Puebla; N. Tlaxcala, 2134-2800 m.
- 71-*P. pumila* (Pall.) Regel "Japanese Stone Pine"
Index Sem. Hort. Petrop. 1858: 23 (1859)= *P. cembra* var. *pumila*
Pall., Fl. Ross. 1:5, t.2, f. (1784).
N. Mongolia; N.E. China; N. Korea; E. USSR; N. Japan.
- 72-*P. pungens* Lamb. "Table Mountain Pine"
Ann. Bot. 2: 198 (1805).
United States: N.E. Georgia to S.E. Pennsylvania, Alleghany Mountains,
0-1350 m.
- 73-*P. radiata* D. Don "Monterey Pine"
Linn. Soc. Lond. Trans. 17: 442 (1836).
U.S.A.: S.W. Oregon to S. California, Orange County, to 305 m.

- 74 - *P. resinosa* Aiton "Eastern Red Pine"
Hort. Kew 3: 367 (1794).
S.E. Canada; N.E. United States: Great Lakes Region, 213-311 m.
- 75 - *P. rigida* Mill. "Pitch Pine"
Gard. Dict. ed. 8, Pinus no.10 (1768).
S.E. Canada; E. United States: Maine to N. Georgia, 427-1372 m.
- 75b - *P. rigida* var. *serotina* (Michx.) Loud. ex Hoopes "Pond Pine"
Book Evergr. 120 (1818)= *P. serotina* Michx., Fl. Bor.-Am. 2: 205 (1803).
S.E. United States: S. New Jersey to C. Florida.
- 76 - *P. roxburghii* Sarg. "Chir Pine"
Silva No. Am. 11: 19 (1897).
N. West Pakistan; N. India; Nepal; Sikkim; Bhutan.
- 77 - *P. rzedowskii* Madr. et M. Caball. "Rzedowski Pine"
Bol. Tecn. Nac. Invest. For., Mex. no.26. 1 (1969).
Mexico: N.W. Michoacan, Coalcoman and Dos Aguas, 2000-2400 m.
- 78 - *P. sabiniana* Dogl. ex D. Don "Digger Pine"
Lamb., Descr. Gen. Pinus. ed. 3(8), v.2: 144-145, t.80 (1832).
U.S.A.: California, S. W. Siskiyou County to N.W. Los Angeles County,
30-1829 m.
- 79 - *P. scopulorum* (Engelm) Lemm. "Rocky Mountain Pine"
Gard. et Forest 10: 183 (1897)= *P. ponderosa* var. *scopulorum* Engelm.,
Wats., Bot. Calif. 2: 126 (1879).
U.S.A.: E. Montana to N. New Mexico, Rocky Mountains.
- 80 - *P. sibirica* Du Tour "Siberian Stone Pine"
Nouv. Dict. Hist. Nat. 18: 18 (1803)= *P. cembra* var. *sibirica* Loud.,
Hort. Brit. 387 (1830).
U.S.S.R.: N.E. Kazakhstan; Siberia ; China: N.E. Sinkiang; N. Mongolia.
- 81 - *P. strobiformis* Engelm. "Southwestern White Pine"
Wisliz., Mem. Tour. North. Mex. 102 (1848)= *P. ayacahuite* var.
brachyptera Shaw, Pines Mex. 11 (1909).
U.S.A.: E. Arizona to S.W. San Luis Potosi, Mexico, 1981-3048 m.
- 82 - *P. strobus* L. "Eastern White Pine"
Sp. Pl. 1001 (1753).
S.E. Canada: S.E. Manitoba to N. Georgia, United States, 610-1524 m.
- 82b - *P. strobus* var. *chiapensis* Mart. "Chiapas White Pine"
An. Inst. Biol., Mex. 11: 81, f. 119-122 (1940)= *P. chiapensis*
(Mart.) Andr., Phytologia 10: 417 (1964).
Mexico: C. Veracruz to W. Chiapas; W. Guatemala; S.W. British Honduras,
610-1830 m.
- 83 - *P. sylvestris* L. "Scotch Pine"
Sp. Pl. 1000 (1753)= *P. sylvestris* var. *sibirica* Ledeb., Fl. Altaica
v. 15 (1833)= *P. sylvestris* var. *sylvestriiformis* (Taken.) Cheng et
C.D. Chu, Fl. Reip. Pop. Sin. 7: 246 (1978).
N. Scotland; S. Scandinavia; N. Portugal to W. Bulgaria to Siberia, U.S.S.R.

- 83b- *P. sylvestris* var. *hamata* Stev. "Caucasian Scotch Pine"
Bull. Mosc. 9: 52 (1838) = *P. sylvestris* var. *armena* (K. Koch)
Fitsch., Handb. Nadelh. 3: 417 (1930).
N. Turkey to Azerbaydzhan, U.S.S.R.; Caucasus Mountains.
- 83c- *P. sylvestris* var. *lapponica* Fries "Lapland Scotch Pine"
Summa Vegetab. Scandinav. 1: 58 (1846).
N. Norway; N. Sweden; N. Finland; N.W. USSR.
- 83d- *P. sylvestris* var. *mongolica* Litv. "Mongolian Scotch Pine"
Schied. Herb. Fl. Ross. 5: 160 (1905).
U.S.S.R.: Kazakhstan to Chita Region; N. Mongolia; China: N.E. Heilungkiang.
- 84- *P. tabulaeformis* Carr. "Northern Chinese Pine"
Tr. Gen. Conif. ed. 2. 510 (1867).
N. China: E. Szechuan to S.E. Kirin, 100-2600 m.
- 84b- *P. tabulaeformis* var. *densata* (Mast.) Rehd. "Southern Chinese Pine"
J. Arn. Arb. 7: 23 (1923) = *P. densata* Mast., J. Linn. Soc. Bot.
37: 416 (1906).
China: W. Szechuan; S.E. Tsinghai; S.E. Tibet; N.W. Yunnan, 2600-3500 m.
- 85- *P. taeda* L. "Loblolly Pine"
Sp. Pl. 1000 (1753).
U.S.A.: Delaware to E. Florida to E. Texas, 457-610 m.
- 86- *P. teocote* Schiede et Deppe "Teocote Pine"
Schlecht et Cham., Linnea 5: 76 (1830) = *P. herrerae* Mart., An. Inst.
Biol. Mex. 11 (1): 76 (1940).
Mexico: W. Chihuahua to C. Chiapas; W. Guatemala, 1524-3048 m.
- 87- *P. thunbergiana* Franco "Japanese Black Pine"
Lisbon Inst. Super. Agron. An. 16: 130 (1949) = *P. thunbergii* Parl.,
DC Prodr. 16(2): 288 (1868).
S. Korea; Japan; coastal plains.
- 88- *P. torreyana* Parry ex Carr. "Torrey Pine"
Tr. Gen. Conif. 326 (1855).
U.S.A.: S. California, W. San Diego County to Santa Rosa Island, to 152 m.
- 89- *P. tropicalis* Morelot "Tropical Pine"
Rev. Hort. Cote d'Or. 1: 106 (1851).
W. Cuba to Isle Of Pines.
- 90- *P. virginiana* Mill. "Virginia Pine"
Gard. Dict. ed. 8. Pinus no.9 (1768).
E. United States: S.E. New York to N.E. Mississippi, 50-850 m.
- 91- *P. wallichiana* A. B. Jackson "Western Himalayan Pine"
Kew Bull. 1938 (2): 85 (1938) = *P. excelsa* Wall. ex D. Don, Lamb.
Descr. Gen. Pinus 2: 5, t.3 (1824).
E. Afghanistan to Bhutan to S.E. Tibet, China to N. Burma.

- 91b- *P. wallichiana* var. *dalatensis* (Ferre) Silba, comb. nova "Dalat Pine"
 Synonymy: *P. dalatensis* Ferre, Toul. Soc. Hist. Nat. Bull. 95:
 178, f.2,3 (1960).
 S. Vietnam: Dalat, Trai Mat, 1500-2400 m.
- 92- *P. wangii* Hu et Cheng "Wang Pine"
 Fan. Mem. Inst. Biol. Bull., n.s. 1: 191 (1948).
 China: S.E. Yunnan, near Wenshan, 500-1800 m.
- 93- *P. washoensis* Mason et Stockwell "Washoe Pine"
 Madrono 8: 62 (1945).
 U.S.A.: N.E. California, S.E. Modoc County to S.W. Washoe County,
 W. Nevada, 2134-2560 m.

PLATYCLADUS Spach

(Cupressaceae)

Hist. Nat. Veg. 2: 333 (1842).

Platycladus is distinguished from *Thuja* in its fleshy cones with pronounced recurved umbos and its seeds lacking wings. Singh (1978) adds that there are major embryological differences distinguishing *Platycladus* from *Thuja*. Cheng et Fu (1978) recognize *Platycladus* as a monotypic genus.

- 1- *P. orientalis* (L.) Franco "Oriental Arborvitae"
 Portug. Acta Biol. ser.B, suppl. 33 (1949) = *Biota orientalis* (L.) Endl.,
 Syn. Conif. 47 (1847) = *Thuja orientalis* L., Sp. Pl. 1002 (1753).
 N. Burma; China; Mongolia; Japan, 1700-3100 m.

PODOCARPUS L. Herit. ex Pers. (Podocarpaceae)

Synopsis. 2: 580 (1807).

In his forthcoming revision of *Podocarpus*, De Laubenfels (1984) recognizes 94 species. The distribution of the taxa has been quite confused in the literature, distribution given here is from information I obtained personally from Prof. De Laubenfels himself.

- 1- *P. affinis* Seeman "Fijian Podoberry"
 Fl. Vitiens. 266 (1865-73).
 Fiji: Vitu Levu, Namosi, Voma Peak.
- 2- *P. alpinus* R. Br. ex Mirb. "Tasmanian Podoberry"
 Mem. Mus. Par. 13: 75 (1825).
 Australia: Victoria; New South Wales; Tasmania, 1000-1800 m.
- 3- *P. angustifolius* Griseb. "Narrowleaf Cuban Podoberry"
 Cat. Pl. Cub. 217 (1866) = *P. ekmanii* Urban, Fedde Rep. Spec. Nov.
 Reg. Veg. 18: 17 (1922).
 W. Cuba: Pinar del Rio, Sierra de Organos to San Miguel.

- 4- *P. annamiensis* Gray "Annam Podoberry"
J. Arn. Arb. 39: 451 (1958).
China: Hainan Island; Vietnam: Annam and Cochín China.
- 5- *P. archiboldii* Gray "Archibold Podoberry"
J. Arn. Arb. 39: 452 (1958).
New Guinea: Vogelkop to Bulolo, 720-1650 m.
- 6- *P. aristulatis* Parl. "Monte Verde Podoberry"
DC. Prodr. 16(2): 513 (1868)= *P. buchii* Urban, Fedde Rep. Spec. Nov. 19: 208 (1924)= *P. buchii* var. *latifolius* Florin, Arkiv. Bot. 259, no.5: 3 (1932)= *P. leonii* Carabia, Caribb. For. 2: 92 (1941)=
P. victorianus Carabia, l.c. (1941).
E. Cuba, type near Monte Verde; Haiti, 800-1100 m.
- 7- *P. atjehensis* (Wassch.) De Laubenfels "Atjeh Podoberry"
Blumea (1984) = *P. neriifolius* var. *atjehensis* Wassch., Blumea 3: 450 (1941).
Indonesia: Sumatra, Atjeh and in W. New Guinea, 2250-3300 m.
- 8- *P. borneensis* De Laub. "Bornean Podoberry"
Blumea (1984)= *P. polystachus* var. *rigidus* Wassch., Blumea 4: 460 (1941).
Malaysia: Sarawak; C. Sabah; Indonesia: Borneo.
- 9- *P. bracteatus* Blume "Western Bristlecone Podoberry"
Enum. Pl. Jav. 88 (1927)= *P. neriifolius* var. *bracteatus* (Blume) Wassch., Blumea 3: 450 (1941).
Indonesia: N. Sumatra; Java; C. Celebes.
- 10- *P. brasiliensis* De Laub. "Brazilian Podoberry"
Fl. Venez. 11,2 (1983).
Venezuela: Guiana Highlands; E. Brazil.
- 11- *P. brassii* Pilg. "Brass Podoberry"
Bot. Jahrb. 68: 246 (1938).
New Guinea: Lake Habbema to Mt. Albert Edward, to 3000m.
- 11b- *P. brassii* var. *humilis* De Laub. "Capella Podoberry"
Fl. Males. (1984-5).
New Guinea: Telefomin District, Mount Capella.
- 12- *P. brevifolius* (Stapf.) Foxw. "Shortleaf Podoberry"
Philipp. J. Sci. Bot. 6: 160, t.29, f.2 (1911)= *P. neriifolius* var. *brevifolius* Stapf., Trans. Linn. Soc., ser.2, 4: 249 (L894).
Malaysia: Sabah, Mount Kinabalu.
- 13- *P. buchholzii* De Laub. "Buchholz Podoberry"
Fl. Venez. 11,2 (1983).
S. Venezuela: Guiana Highlands.
- 14- *P. capuronii* De Laub. "Capuron Podoberry"
Adansonia, ser.2, 11(4): 713 (1971)= *P. woltzii* Gaussen, Trav. Lab. For. Toul., Tome 1, v. 9, art. 5: 4 (1974).

- E. Madagascar, type near Mt. Ambatomenaloha, 1500-2800 m.
- 15- *P. celatus* De Laub. "Moro Podoberry"
Fl. Venez. 11(2). (1983).
S. Venezuela: low elevation Amazon; Peru: Andes foothills;
Bolivia: Moro (type).
- 16- *P. chinensis* (Roxb.) Wall. ex Forb. "Chinese Podoberry"
Pinet. Woburn. 6. 212 (1839) = *P. macrophyllus* var. *maki* Sieb. ex
Endl., Syn. Conif. 216 (1847).
N. Burma; China; C. Taiwan; S. Japan.
- 17- *P. chingianus* (Gray) S.Y. Hu "Ching Podoberry"
Taiwania 10: 32 (1964) = *P. chingii* Gray, J. Arn. Arb. 39: 474 (1958).
China: Chekiang, Ching Yean Shun and S. Kwangsi Chuang, to 100 m.
- 18- *P. confertus* De Laub. "Silam Podoberry"
Blumea (1984).
Malaysia: Sabah, east slope of Mt. Silam; Sarawak, to 550 m.
- 19- *P. coriaceus* L.C. Rich. "Yacca Podoberry"
Comm. Bot. Conif. 14, pl. 1, f. 3 (1826) = *P. coriaceus* var.
sulcatus Pilg., Pflanzenr. 4. fam. 5: 88 (1903).
Puerto Rico; Montserrat; Guadalupe; Dominica; St. Kitts; Martinique.
- 20- *P. costalis* C. Presl. "Formosan Podoberry"
Epimel. Bot. 236 (1849).
Taiwan: Orchid Island; Philippines: Luzon, Polilio Islands.
- 21- *P. crassigemmis* De Laub. "Asaro Podoberry"
Blumea 26(1): 141 (1980) = *P. archiboldii* var. *crassiramosus* Gray,
J. Arn. Arb. 39: 453 (1958).
New Guinea: Lake Habbema to Upper Asaro Valley (type), 1800-3500 m.
- 22- *P. cunninghamii* Colenso "Cunningham Podoberry"
In Mem: Nat. Hist. Reg. Ruah. Mt. Range, N. Zeal. 1845-47: 58
(1884).
S. New Zealand: Stewart Island and South Island, to 950 m.
- 23- *P. decumbens* Gray "Decumbent Podoberry"
J. Arn. Arb. 36: 202 (1955).
S. New Caledonia, type from Mt. des Sources, 800-1000 m.
- 24- *P. deflexus* Ridley "Malaysian Podoberry"
Fl. Malay Penin. 5: 283 (1925).
Malaysia: Malay Peninsula, Pahang, Gunong Tahan, 1650-2300 m.
- 25- *P. degeneri* (Gray) De Laub. "Degener Podoberry"
Blumea (1984) = *P. neriiifolius* var. *degeneri* Gray, J. Arn.
Arb. 39: 467 (1958).
Fiji: Vitu Levu.

- 26- *P. dispersus* White "Atherton Podoberry"
Contrib. Arnold Arb. 4: 10 (1933).
Australia: N.E. Queensland, Atherton Tableland, rain forest.
- 27- *P. drouynianus* F. Muell. "Drouyn Podoberry"
Fragm. 4: 86, t.31 (1863-4).
Australia: Western Australia, Warren District, Manjimup.
- 28- *P. elatus* R. Brown. ex Endl. "Giant Australian Podoberry"
Syn. Conif. 213 (1847).
Australia: E. Queensland, Cape York Peninsula; E. New South Wales.
- 29- *P. elongatus* (Ait.) L'Her. ex Pers. "South African Podoberry"
Syn. Pl. 2: 580 (1807).
South Africa: S.W. Cape Province; Zimbabwe: Chimamieanie Mts.
- 30- *P. fasciculus* De Laub. "Tai-Shou Shan Podoberry"
Blumea (1984).
S. Japan; Taiwan: Tai-Shu Shan Forestry District, to 2000 m.
- 31- *P. gibbsii* Gray "Gibbs Podoberry"
J. Arn. Arb. 39: 429 (1958).
Malaysia: N. Sabah, Mt. Kinabalu, Marai Parai, 1600-2300 m.
- 32- *P. glaucus* Foxw. "Blue Podoberry"
Philipp. Jour. Sci., Bot. 2: 258 (1907).
W. Philippines; Indonesia: E. Celebes; New Guinea; Solomon Islands,
to 2400 m.
- 33- *P. globulus* De Laub. "Sabah Podoberry"
Blumea (1984).
Malaysia: C. Sabah, Mt. Silam; N.E. Sarawak, to 853 m.
- 34- *P. glomeratus* D. Don. ex Lamb. "Huanuco Podoberry"
Gen. Pin. 2: 21 (1824).
Peru: Huanuco-Panao; N.C. Bolivia, 2500-4000 m.
- 35- *P. gnidioides* Carr. "New Caledonian Podoberry"
Tr. Conif. ed.2: 656 (1867).
S. New Caledonia: Mt. Humboldt to Mt. des Sources, 400-1600 m.
- 36- *P. grayi* De Laub. "Cape York Podoberry"
Blumea (1984).
Australia: N. Queensland, Annan River, to 400 m.
- 37- *P. guatemalensis* Standley "Guatemalen Podoberry"
Proc. Biol. Soc. Wash. 37: 49-50 (1924)= *P. guatemalensis* var.
allienii (Standl.) Buchh. et Gray, J. Arn. Arb. 29: 137 (1948)
= *P. guatemalensis* var. *pinetorum* (Bartl.) Buchh. et Gray,
l.c. (1948).
Guatemala; British Honduras; Panama; W. Columbia; N. Venezuela,
400-700 m.

- 38- *P. henkellii* Stapf. ex Dallim. et Jacks. "Henkell Podoberry"
Handb. Conif. 45,47 (1923)= *P. ensisculus* Melv., Kew Bull. 1954: 566
(1955).
E. South Africa: Natal; E. Tanganyika, highlands, 1900-2000 m.
- 39- *P. humbertii* De Laub. "Humbert Podoberry"
Adansonia, ser.2, 11(4): 714 (1971).
N.E. Madagascar: Anjanaharibe Mts., W. Andapa, 1600-2000 m.
- 40- *P. insularis* De Laub. "Sudest Podoberry"
Blumea (1984).
Indonesia: Sudest Island (type); E. New Guinea; New Hebrides.
- 41- *P. lambertii* Klotzsch. ex Endl. "Lambert Podoberry"
Syn. Conif. 211 (1847).
E. Argentina; Brazil: Serra de San Jose; Campos do Jordao.
- 42- *P. latifolius* (Thunb.) R. Brown "Kenya Podoberry"
Mem. Mus. Hist. Paris. 13: 75 (1825)= *P. milanjanus* Rendle, Trans.
Linn. Soc. ser.2, 4: 61 (1894)= *P. ulgurensis* Pilg., Notizbl. Bot.
Gart. Berlin. 12. 82 (1934).
Cameroon; S. Sudan; Congo; Zaire; Uganda; Tanganyika (Tanzania);
South Africa, to 1800 m.
- 42b- *P. latifolius* var. *latior* Pilg. "Table Mountain Podoberry"
Pflanzenr. 4,5: 90 (1903).
South Africa: Cape Province, Table Mountain.
- 43- *P. laubenfelsii* Tieng. "De Laubenfels Podoberry"
Blumea (1984).
Malaysia: Sabah, Mt. Kinabalu; Indonesia: N.E. Borneo, to 1524 m.
- 44- *P. lawrencii* Hook. f. ex Hook. "Lawrence Podoberry"
Lond. J. Bot. 4: 151 (1845)= *P. acutifolius* Kirk, Trans. N. Zeal.
Instit. 16: 370 (1873).
New Zealand: S. Island, Malboro Straits to S. Westland.
- 45- *P. ledermannii* Pilg. "Ledermann Podoberry"
Bot. Jahrb. 54: 210 (1916)= *P. idenburgensis* Gray, J. Arn. Arb. 39:
447 (1958).
New Guinea: Vogelkop to Morobe; New Britain: Mt. Talawe.
- 46- *P. levis* De Laub. "Mariatu Podoberry"
Blumea 24(2): 496 (1978).
Indonesia: E. Borneo; Celebes; Moluccas; New Guinea, 200-700 m.
- 47- *P. longifoliolatus* Pilg. "Mou Podoberry"
Engler, Pflanzenr. 4(5); 79 (1903).
New Caledonia, along the coasts, type near Mt. Mou, at 1100-1450 m.
- 48- *P. lophatus* De Laub. "Tapulao Podoberry"
Kaliskan, Philipp. J. Biol. 7(2): 137 (1978).
Philippines: Luzon, Zambales Province, Mt. Tapulao, to 1800 m.

- 49- *P. lucienii* De Laub. "Lucien Podoberry"
 Brittonia 12: 80 (1960).
 S. New Caledonia: Mt. Panie, type naar Riviere Bleue, 220-900 m.
- 50- *P. macrocarpus* De Laub. "Bigcone Philippine Podoberry"
 Kaliskan, Philipp. J. Biol. 7(2): 140 (1978).
 Philippines: Luzon, Mt. Pico de Loro to Mt. Binuang, 50-2040 m.
- 51- *P. macrophyllus* (Thunb.) Don "Japanese Podoberry"
 Lamb., Descr. Gen. Pinus 2: 22 (1824); Gord., Pinetum ed.1:222
 (1858)= *P. forrestii* Craib. et Smith, Notes Bot. Gard. Edinb. 12:
 219 (1920)= *P. macrophyllus* var. *angustifolius* Blume, Rumphia 3:
 215 (1847).
 S. Japan: Mt. Maya; China: Chekiang; Szechuan and Yunnan.
- 52- *P. madagascariensis* Baker "Madagascar Podoberry"
 J. Linn. Soc. 12: 447 (1885).
 E. Madagascar, local, type near Ranomena, 800-2400 m.
- 52b- *P. madagascariensis* var. *procerus* De Laub. "Mahatalaky Podoberry"
 Adansonia ser.2, 11(4): 715 (1971).
 E. Madagascar, type near Fort Dauphin, Mahatalaky.
- 52c- *P. madagascariensis* var. *rotundus* Laurent "Tsaratanana Podoberry"
 Ann. Fac. Sci. Marseille 23: 59 (1915).
 N.E. Madagascar, type near Tsaratanana, 1500-2000m.
- 53- *P. magnifolius* Buchh. et Gray "Larecaju Podoberry"
 J. Arn. Arb. 29: 133 (1948).
 S.E. Venezuela: Bolivar; Bolivia: Larecaju Province, 1580-1600 m.
- 54- *P. matudai* Lundell "Matuda Podoberry"
 Phytologia 1: 212 (1937)= *P. matudai* var. *macrocarpus* Buchh. et
 Gray, J. Arn. Arb. 29: 132 (1948)= *P. reichei* Buchh. et Gray, l.c.
 131 (1948).
 Mexico: Vera Cruz; Puebla; Chiapas; Guatemala: Dept. Huehuetenango,
 1000-3500 m.
- 55- *P. micropedunculatus* De Laub. "Marudi Podoberry"
 Blumea (1984).
 Malaysia: N.W. Sabah; N. Sarawak, Marudi Forest Reserve, to 18 m.
- 56- *P. nakaii* Hayata "Nakai Podoberry"
 Ic. Pl. Form. 6: 66 (1916)= *P. macrophyllus* var. *nakaii* (Hay.)
 Li et Keng, Taiwania 5: 339, f.2 (1954).
 N. Taiwan: Shin Chiku Province, to 800 m.
- 57- *P. neriiifolius* Don ex Lamb. "Oleander Podoberry"
 Descr. Gen. Pinus 1(2): 21 (1826)= *P. decipiens* Gray, J. Arn. Arb.
 36: 204 (1955)= *P. junghuhniana* Miq., Pl. Junghuhn. 1.2 (1851)=
P. neriiifolius var. *membranacea* Wassch., Blumea 4: 445 (1941) =
P. neriiifolius var. *polyanthus* Wassch., l.c. (1941).
 Nepal to N. Burma; China: S. Yunnan; Indochina; Malaysia; Indonesia;
 Philippines; Solomon Islands; Fiji.

- 58- *P. nivalis* Hook. f. "Snow Podoberry"
 Ic. Pl. t.582 (1843).
 New Zealand: North Island, Mt. Tongariro to Foveaux, South Island, 800-1800 m.
- 59- *P. novae-caledoniae* Vieillard "Dore Podoberry"
 Ann. Sci. Nat. ser.4, 16: 56 (1862).
 S. New Caledonia: Thio to Prony, type near Mount Dore, 50-600 m.
- 60- *P. nubigenus* Lindl. ex Paxt. "Chile Mountain Podoberry"
 Flow. Gard. 2: 162, f. 218 (1851-2).
 S. Chile: Santiago; Argentina: Patagonia, 50-780 m.
- 61- *P. oleifolius* D. Don ex Lamb. "Olive-leaf Podoberry"
 Gen. Pin. ed.1(2): 20 (1824).
 Restricted to north central Peru.
- 61b- *P. oleifolius* var. *macrostachyus* (Parl.) Buchh. et Gray "Aragua Podoberry"
 J. Arn. Arb. 29: 140 (1948) = *P. oleifolius* var. *costaricensis* Buchh. et Gray, l.c. (1948) = *P. oleifolius* var. *trujilensis* Buchh. et Gray, l.c. 141 (1948).
 Mexico; Guatemala; Latin America; Venezuela ; Ecuador; N. Peru, 1700-3200 m.
- 62- *P. pallidus* Gray "Tongan Podoberry"
 Bull. Bishop. Mus., Honolulu, no.220: 46 (1959).
 Polynesia: E. Tongan Islands, rainforest.
- 63- *P. parlatorei* Pilg. "Parlatore Podoberry"
 Pflanzenr. 4.5. (Heft 18): 86 (1903) = *P. curvifolius* Carr., Tr., Conif. ed. 1: 450 (1855).
 S. Bolivia: Cochabamba; N. Argentina: Tucuman Province, 1700-3000 m.
- 64- *P. pendulifolius* Buchh. et Gray "Venezuelan Weeping Podoberry"
 J. Arn. Arb. 29: 138, t.6, f.2 (1948).
 W. Venezuela: Tachira; Merida, 1800-3000 m.
- 65- *P. pilgeri* Foxw. "Pilger Podoberry"
 Philipp. J. Sci. Bot. 2: 259 (1907) = *P. wangii* Cheng, Sunyatsenia 6: 26 (1941).
 S. China: S.E. Yunnan; Indonesia: Celebes; New Guinea; Philippines; Solomon Islands, 1400-3000 m.
- 66- *P. polyspermus* De Laub. "Two-seed Podoberry"
 Fl. Nouv. Caled. 4: 60 (1972).
 N. New Caledonia: type near Me Maoya, 650-900 m.
- 67- *P. polystachus* R. Brown ex Endl. "Indonesian Podoberry"
 Syn. Conif. 215 (1847) = *P. littoralis* Teysm., Nat. Tijdschr. Ned. Ind. 36: 237 (1876) = *P. thevetifolia* Blume, Rumphia 3: 213 (1847).
 S. Thailand; Malaysia; Philippines; Indonesia: Borneo; W. New Guinea.
- 68- *P. pseudobracteatus* De Laub. "Eastern Bristlecone Podoberry"
 Blumea 26(1): 141 (1980).
 W. New Guinea to Papua New Guinea, 1700-3500 m.

- 69- *P. purdieanus* Hook. "Purdie Podoberry"
 Ic. Pl. pl. 624 (1844) = *P. jamaicensis* Hort. ex Gord., Pinetum
 281 (1858).
 C. Jamaica: Mount Diablo, 732-1068 m.
- 70- *P. ridleyi* (Wassch.) Gray "Ridley Podoberry"
 J. Arn. Arb. 39: 435 (1958).
 Malaysia: Malay Peninsula, Gunong Blumut, 1000 m.
- 71- *P. roraimae* Pilg. "Roraima Podoberry"
 Notizbl. Bot. Gart. Berlin 5: 299 (1913).
 Venezuela: Bolivar, Mt. Roraima, 2000-3000 m.
- 72- *P. rostratus* Laurent "Andringitra Podoberry"
 Ann. Fas. Sc. Marseille 23: 60 (1915) = *P. perrieri* Gaussen et Woltz,
 Trav. Lab. For. Toul., Tome 1, v.9, art.5: 4 (1974).
 E. Madagascar, type near Mount Tsaratanana, to 1200 m.
- 73- *P. rotundus* De Laub. "Banahao Podoberry"
 Kaliskan, Philipp. J. Biol. 7(2): 136 (1978).
 Philippines: Luzon, Mount Banahao (type); Indonesia: E. Borneo, 1200-2100 m.
- 74- *P. rubens* De Laub. "Red Podoberry"
 Blumea (1984) = *P. neriifolius* var. *timorensis* Wassch., Blumea
 4: 454 (1941).
 Malaysia: S. Sabah; Indonesia: Sumatra; Celebes; New Guinea;
 Solomon Islands, to 2134 m.
- 75- *P. rumphii* Blume "Rumphius Podoberry"
 Rumphia 3: 214 (1847) = *P. koordersii* Pilg. ex Koorders et Valetton,
 Meded. Lands. Plant. (Batavia) 68: 268 (1904) = *P. philippinensis*
 Foxw., Philipp. J. Sc. Bot. 6: 163 (1911).
 China: Hainan; Malaysia; Philippines; Indonesia.
- 76- *P. rusbyi* Buchh. et Gray "Rusby Podoberry"
 J. Arn. Arb. 29: 134 (1948).
 Bolivia: Mapiri; Cocopunco, to 3050 m.
- 77- *P. salicifolius* Klotzsch et Karts. ex Endl. "Venezuelan Willow-leaf
 Podoberry"
 Syn. Conif. 209 (1847) = *P. pittieri* Buchh. et Gray, J. Arn. Arb.
 29: 130 (1948).
 N. Venezuela: Caracas.
- 78- *P. salignus* D. Don ex Lamb. "Chilean Willow-leaf
 Podoberry"
 Descr. Gen. Pinus. ed.2: 20 (1824).
 S. Chile: Maule to Valdivia, to 900 m.
- 79- *P. salomoniensis* Wassch. "Solomon Islands Podoberry"
 Blumea 4: 430 (1941).
 E. Solomon Islands, San Cristobal Island, Hinuahaoro, 400-900 m.

- 80- *P. sellowii* Klotzsch ex Endl. "Sellow Podoberry"
Syn. Conif. 209 (1847)= *P. sellowii* var. *angustifolius* Pilg., Pflanzenr.
4.5 (Heft 18): 88 (1903).
S. Brazil: Parana, Roca Nova.
- 81 *P. smithii* De Laub. "Smith Podoberry"
Blumea (1984).
Australia: Queensland, Mt. Lewis, to 914 m.
- 82- *P. spathoides* De Laub. "Malaysian Bristlecone Podoberry"
Blumea (1984).
Malaysia: Malaya; Indonesia: Kepulauan Talaud; Solomon Islands, rare.
- 83- *P. spinulosus* (Smith) R. Brown ex Mirb. "Spiny-leaf Podoberry"
Geogr. Conif. in Mem. Mus. 13: 75 (1825).
Australia: S.E. New South Wales, sandy areas.
- 84- *P. sprucei* Parl. "Chimborazo Podoberry"
DC Prodr. 16(2): 510 (1868).
W. Equador : Chimborazo ; N. Peru.
- 85- *P. steyermarkii* Buchh. et Gray "Steyermark Podoberry"
J. Arn. Arb. 29: 133 (1948).
S.E. Venezuela: Bolivar, Carrao-Tepui , 2100-2400 m.
- 86- *P. subtropicalis* De Laub. "Subtropical Podoberry"
Blumea (1984).
China: Szechuan; S.W. Yunnan; S. Kwangtung, E. Chekiang.
Cultivated in Singapore and elsewhere in Asia as *P. neriifolius*.
- 87- *P. sylvestris* Buchh. et Gray "Woodland Podoberry"
Bull. Mus. Paris. ser.2,21: 285 (1949)= *P. novae-caledoniae* var.
colliculatis Gray, J. Arn. Arb. 39: 432 (1958).
New Caledonia: coastal areas, type near Mois de Mai, 200-1300 m.
- 88- *P. tepuiensis* Buchh. et Gray "Ptari-tepui Podoberry"
J. Arn. Arb. 29: 134 (1948).
Venezuela: Bolivar, Mount Ptari-tepui, 1700-1800 m.
- 89- *P. teysmannii* Miquel "Teysmann Podoberry"
Fl. Nederl. Indie 2: 1072 (1959)= *P. neriifolius* var. *teysmannii*
(Miq.) Wassch., Blumea 4: 453 (1941).
Malaysia: Malaya; Indonesia: N. Sumatra, Tapanoeli.
- 90- *P. tixieri* Gaussen "Tixier Podoberry"
Trav. Lab. For. Toul., Tome 2, v.1, part.2-3, fasc.14, ch.21:155,
f. 840 (1976).
S.E. Thailand; S.W. Kampuchea (Cambodia), Elephant Mountains, to 1000 m.
- 91- *P. totara* D. Don ex Lamb. "Totara Podoberry"
Descr. Gen. Pinus, ed.2: 184 (1832)= *P. totara* var. *waihoensis*
Wardle, N. Zeal. J. Bot. 10(1): 201 (1972).
New Zealand: North Island, Tongariro and S.E. Itago.

- 92- *P. transiens* (Pilg.) De Laub. "Transien Podoberry"
 Blumea (1984)= *P. lambertii* var. *transiens* Pilg., Pflanzenr. 4.5.
 (Heft 18): 86 (1903).
 S.C. Brazil: Serra de San Jose and Serra do Cipo.
- 93- *P. trinitensis* Gray "Trinidad Podoberry"
 J. Arn. Arb. 29: 135 (1948).
 Trinidad: Mount Tucuche; Tobago.
- 94- *P. urbanii* Pilg. "Urban Podoberry"
 Pflanzenr. 4.5. (Heft.18): 89 (1903).
 Jamaica: Cinchona; Blue Mts.; Mossman's Peak, 370-2225 m.

PRUMNOPITYS Philippi

(Podocarpaceae)

Linnaea 30: 731 (1860).

Prumnopitys is distinguished from *Podocarpus* in its spirally arranged leaves that lack a hypoderm and contain a single resin duct below the vein. The male cones resemble the *Cupressaceae* in general appearance. The female cone is borne on a specialized scaly peduncle. The female cone lacks the enlarged basal receptacle of *Podocarpus*. The fleshy part of the female cone is quite a tasty delicacy.

- 1- *P. amara* (Blume) De Laub. "Indonesian Prumnopitys"
 Blumea 24(1): 190 (1978)= *Podocarpus amara* Blume, Enum. Pl. Java
 88 (1827).
 E. Malaysia; Philippines; Indonesia; New Britain; Australia: N. Queensland.
- 2- *P. andina* (Poep. ex Endl.) De Laub. "Chilean Prumnopitys"
 Blumea 24(1): 189 (1978)= *P. elegans* Phil., Linnaea 30: 732 (1860)
 = *Podocarpus andina* Poep. ex Endl., Syn. Conif. 219 (1847).
 S. Chile: Valdivia, Cordillera de la Costa, 1219-1830 m.
- 3- *P. exigua* De Laubenfels, species nova "Chochabamba Prumnopitys"

Arbor parva, 2-10 m. Folia semi-linearia, ad basis curvata, sessilia, decurrentes apice breviter rotundata recta vel paulatim falcata, supra per costam caniculata, 10-15 x circa 2 mm. Ramulus strobilorum femineorum brevis 1-2 cm., foliorum minorum 2 mm. longorum, ovulus solitarius axillaris 1-2 per strobilus. Galbuli globulus 10 x 11 mm. crista parva inclusus.

Type: Cardenas 4879 (holo, US), N. Bolivia: Cochabamba, Sehuenka-Totora.

Prumnopitys exigua differs from *P. montana* in its nearly spherical cone, the reduced leaves on the fertile shoot and the weaker groove on the midrib of the leaf.

- 4- *P. ferruginea* (D. Don) De Laub. "New Zealand Prumnopitys"
 Blumea 24(1): 190 (1978)= *Podocarpus ferruginea* Don ex Lamb.,
 Pinus ed.3 (2): app. (1832).
 New Zealand: South Island endemic.

- 5- *P. ferruginioides* (Compt.) De Laub. "New Caledonian Prumnopitys"
 Fl. Nouv. Caled. 4: 56 (1972) = *Podocarpus distichus* Buchh. et Gray,
 J. Arn. Arb. 32: 89 (1951) = *Podocarpus ferruginioides* Compt., J. Linn.
 Soc. Bot. 45: 424 (1922).
 New Caledonia: local, type near Mount Nekando, 200-1500 m.
- 6- *P. harmsiana* (Pilg.) De Laub. "Harms Prumnopitys"
 Blumea 24 (1): 140 (1978) = *Podocarpus harmsiana* Pilg., Pflanzr. 4.5.
 (Heft 18): 68 (1903) = *Podocarpus utilior* Pilg. ex Fedde, Rep. Nov.
 Spec. 1: 189 (1905).
 Columbia; Venezuela; C. Peru; W. Bolivia.
- 7- *P. ladei* (Bailey) De Laub. "Lade Prumnopitys"
 Blumea 24(1): 190 (1978) = *Podocarpus ladei* Bailey, Qsld. Ag. Journ.
 15: 899 (1905).
 Australia: N.E. Queensland, Mount Spurgeon, to 1067 m.
- 8- *P. montana* (Humb. et Bonpl. ex Willd.) De Laub. "Mountain Prumnopitys"
 Blumea 24 (1): 189 (1978) = *Taxus montana* Humb. et Bonpl. ex Willd.,
 Spec. Pl. 4: 857 (1805) = *Podocarpus taxifolia* Kunth., Nov. Gen. 2:2
 (1817).
 W. Venezuela; Columbia; Ecuador; N. Peru.
- 9- *P. standleyi* (Buchh. et Gray) De Laub. "Costa Rican Prumnopitys"
 Blumea 24(1): 190 (1978) = *Podocarpus standleyi* Buchh. et Gray, J.
 Arn. Arb. 29: 72 (1848).
 Costa Rica: Volcan de Poas, also near Cerro las Vueltas.
- 10- *P. taxifolia* (Sol. ex D. Don) De Laub. "Yew-leaf Prumnopitys"
 Blumea 24(1): 190 (1978) = *Podocarpus spicata* R. Br. ex Mirbel,
 Mem. Mus. 13: 75 (1825).
 New Zealand: North Island, swampy regions, to 550 m.

PSEUDOLARIX Gord.

(Pinaceae)

Pinet. 292 (1858).

Cheng et Fu (1978) recognize *Pseudolarix* as a monotypic genus.

- 1- *P. amabilis* (Nelson) Rehder "Golden Larch"
 J. Arn. Arb. 1: 53 (1919) = *P. pourtetii* Ferre, Trav. Lab. For.
 Toul. 1,4(4): 1, f. 1-11, 12a (1944) = *Chrysolarix amabilis*
 (Nelson) Moore, Bailey 13(3): 133 (1965).
 China: Szechuan to Anwei, 100-1500 m.

PSEUDOTAXUS Cheng

[Taxaceae]

Notes For. Inst. Nat. Centr. Univ. Nanking. Dendrol. Ser., no. 1, 1
(1947)= *Nothotaxus* Florin, Acta Hort. Berg. 14(9); 394 (1948).

- 1- *P. chienii* (Cheng) Cheng "Chien White-berry Yew"
Notes For. Inst. 1.c. (1947).
China: Chekiang, Lungtsuan; Kiansi; Hunan; Kwangtung; Kwangsi, to 1000m.

PSEUDOTSUGA Carr.

[Pinaceae]

Tr. Conif. ed.2: 256 (1867).

Four species of *Pseudotsuga* are accepted here. Other taxa accepted by Cheng et Fu (1978) appear to be based on inconsistent differences in length and width of leaves. Herbarium specimens I have seen at Harvard (A, GH) show a wide variation in leaf characteristics within the same localities of a single species; further these differences occur on duplicate specimens of the same collection number.

- 1- *P. japonica* (Shirasawa) Beissn. "Japanese Douglas Fir"
Mitteil. Deutsch. Dendrol. Ges. 5: 62 (1896).
S.E. Japan: Tosa; Kii and Yamato, 305-914 m.
- 2- *P. macrocarpa* (Vasey) Mayr. "Bigcone Douglas Fir"
Wald. Nordam. 278, pl. 6,8,9 (1840).
U.S.A.: S. California, W. Santa Barbara County to N.C. San Diego County, 274-2438 m.
- 3- *P. menziesii* (Mirb.) Franco "Coast Douglas Fir"
De Conif. Duar. Nom.4 (1950)= *P. taxifolia* (Poir) Britt. ex Sudw.,
U.S. Dep. Agric. Div. For. Bull. 14: 46 (1897).
S.W. Canada to N. California, U.S.A., 823-1829 m.
- 3b- *P. menziesii* var. *glauca* (Beissn.) Franco "Rocky Mountain Douglas Fir"
Bol. Soc. Brot. (Coimbra) ser.2, 24 : 77 (1950)= *P. menziesii* var. *caesia* (Schwer.) Franco, 1.c. (1950).
U.S.A.: Utah to W. New Mexico; N. Mexico, 610-2896 m.
- 4- *P. sinensis* Dode "Chinese Douglas Fir"
Bull. Soc. Dendr. France 23: 58 (1912)= *P. brevifolia* Cheng et Fu,
Acta Phytotax. Sin. 13(4): 83, f. 16 (1975)= *P. forrestii* Craib,
Notes Bot. Gard. Edinb. 11: 189, f. 160 (1919)= *P. gausseni* Flous,
Bull. Soc. Hist. Nat. Toul. 69: 417, f.1-11 (1936) = *P. salvodori*
Flous, 1.c. 419 (1936)= *P. wilsoniana* Hayata, Ic. Pl. Formos.
5: 204, t.15 (1915).
China: Yunnan to Chekiang; Taiwan, 600-3300 m.

SAXAEGOTHAEA Lindl.

(Podocarpaceae)

J. Hort. Soc. 6: 258 (1851).

- 1- *S. conspicua* Lindl. "Prince Albert's Saxaegothaea"
J. Hort. Soc. 1.c. (1851).
S. Chile: Valdivia, Hueicoila; Argentina: W. Patagonia, to 600 m.

SCIADOPITYS Sieb. et Zucc.

(Taxodiaceae)

Fl. Jap. 2: 1 (1842-70).

Takhtajan (1959) has recently proposed to consider *Sciadopitys* in its own family, namely the *Sciadopityaceae*. However, just as *Phyllocladus* has a unique leaf structure, the cones are typical of its family. De Laubenfels (pers. comm., Dec. 1983) considers *Sciadopitys* would best be regarded under the *Taxodiaceae* as a member of a group of remnant and unique genera.

- 1- *S. verticillata* (Thunb.) Sieb. et Zucc. "Japanese Sciadopitys"
Fl. Jap. 2: 1, t.101,102 (1842-70).
Japan: C. Hondo and Shikoku, 200-1700 m.

SEQUOIA Endl.

(Taxodiaceae)

Syn. Conif. 197 (1847).

- 1- *S. sempervirens* (D. Don) Endl. "Coast Redwood"
Syn. Conif. 198 (1847).
U.S.A.: S.W. Oregon to W. Monterey County, W. California, 0-914 m.

SEQUOIADENDRON Buchholz

(Taxodiaceae)

Amer. Journ. Bot. 26: 536 (1939).

- 1- *S. giganteum* (Lindl.) Buchh. "Giant Sequoia"
Am. J. Bot. 1.c. (1939) = *Sequoia gigantea* (Lindl.) Decne, Bull. Soc.
Bot. France 1: 70 (1854).
U.S.A.: E. California, S. Placer County to C. Tulare County, 914-2286 m.

TAIWANIA Hayata

(Taxodiaceae)

J. Linn. Soc. Bot. 37: 330 (1906).

Dallimore and Jackson (1966) recognized *Taiwania* as a monotypic genus. The Chinese plants may be considered as a variety, differing from the Taiwan plants in having finer foliage and longer leaves that are non-glaucous.

- 1- *T. cryptomerioides* Hay. "Formosan Taiwania"
J. Linn. Soc. Bot. 1.c., t. 16 (1906)
N.E. Taiwan: Mount Morrison, western slopes, 1800-2600 m.

- 1b- *T. cryptomerioides* var. *flousiana* (Gauss.) Silba, comb. nova.
 "Chinese Taiwania"
 Synonymy: *T. flousiana* Gaussen, Trav. Lab. For. Toul. 1,3(2):
 6 (1939)= *T. yunnanensis* Koidz., Acta Phytotax. Genbot.
 11: 138 (1942).
 N.E. Burma; China: W. Yunnan to N.W. Hupeh, 500-2700 m.

TAXODIUM Rich.

(Taxodiaceae)

Paris. Mus. Hist. Nat. Ann. 16: 298 (1810).

Little (1979) recognizes two species and one variety of *Taxodium*. *Taxodium distichum* and its variety have smooth, globose, purplish-brown cones, whereas *T. mucronatum* has distinctly warty cones that are oblong in shape.

- 1- *T. distichum* (L.) Rich. "Common Bald Cypress"
 Paris Mus. Hist. Nat. Ann. 16: 298 (1810).
 U.S.A.: S. Delaware to S. Florida to E. Texas, 152-518 m.
- 1b- *T. distichum* var. *nutans* Sweet "Pond Bald Cypress"
 Hort. Brit. 372 (1827)= *T. ascendens* Brongn., Ann. Sci. Nat. 30:
 182 (1833)= *Glyptostrobus lineatus* (Poir) Druce, Bot. Exch. Club.
 Brit. Isles 4: 624 (1917).
 U.S.A.: S.E. Virginia to S. Florida to S.E. Louisiana, near the coast.
- 2- *T. mucronatum* Ten. "Montezuma Bald Cypress"
 Ann. Sci. Nat. Bot., ser.3, 19: 355 (1853).
 U.S.A.: S.W. Texas; Mexico: Tamaulipas; Oaxaca; Chiapas; Guatemala.

TAXUS L.

(Taxaceae)

Sp. Pl. 1040 (1753).

De Laubenfels (Fl. Males. 1984-5) recognizes seven species of *Taxus*. Other taxa accepted by Cheng et Fu (1978) seem to be based on differences in juvenile foliage.

- 1- *T. baccata* L. "English Yew"
 Sp. Pl. 1040 (1753).
 British Isles; S. Scandinavia; Europe; N.E. Africa; N. Persia, 1400-2000 m.
- 2- *T. brevifolia* Nutt. "Western Yew"
 No. Am. Sylva 3: 86, pl. 108 (1849).
 S.W. Canada; U.S.A.: S.E. Alaska to N. Idaho to N. California, 0-2134 m.
- 3- *T. canadensis* Marsh. "Canadian Yew"
 Arbustr. Am. 151 (1785).
 Endemic to southeast Canada and in the northeast United States.
- 3b- *T. canadensis* var. *floridana* (Nutt. ex Chapm.) Silba, comb. nova.
 "Florida Yew"
 Synonymy: *T. floridana* Nutt. ex Chapm., Fl. South. U.S. 436 (1860).

U.S.A.: N.W. Florida, Gadsen and Liberty Counties, to 30 m. altitude.

- 4- *T. cuspidata* Sieb. et Zucc. "Japanese Yew"
 Abh. Math.-Phys. Akad. Wiss. Munch. 4(3): 232, t.3 (1846).
 Korea; N.E. China; S.E. USSR; Japan, 500-2400 m.
- 5- *T. globosa* Schlecht. "Mexican Yew"
 Linnea 12: 496 (1838).
 C. Mexico; S. Guatemala and S. El Salvador.
- 6- *T. sumatrana* (Miq.) De Laub. "Chinese Yew"
 Kaliskan, Philipp. J. Biol. 7(2): 151 (1978) = *T. chinensis* (Pilg.) Rehd.,
 J. Arn. Arb. 1: 51 (1919) = *T. celebica* (Warb.) Li, Woody Fl. Taiwan. 34
 (1963) = *T. mairei* Lemee et Levl., Mone des Pl. ser.2,16: 20 (1914)
 = *T. speciosa* Florin, Acta Hort. Berg. 14 (8): 382, t.6 (1948).
 N.E. India: Assam; N. Burma; C. China; S. Vietnam; Indonesia; Philippines;
 Taiwan, 457-2450 m.
- 7- *T. wallichiana* Zucc. "Himalayan Yew"
 Abh. Math.-Phys. Akad. Wiss. Munch. 3: 803, t.5 (1843).
 = *T. yunnanensis* Cheng et L.K. Fu, Acta Phytotax. Sin. 13 (4):
 87, pl. 52,4-7 (1975).
 N.E. Afghanistan; N. India; Bhutan; China: S. Tibet; S. Yunnan, 1600-3300 m.

TETRACLINIS (Vahl.) Mast. (Cupressaceae)

J. Roy. Hort. Soc. 14: 250 (1892).

- 1- *T. articulata* Mast. "Mediterranean Sandarac Cypress"
 J. Linn. Soc. Bot. 30: 14 (1893).
 S. Spain; Morocco; Algeria; Tunisia, to 1800 m.

THUJA L. (Cupressaceae)

Sp. Pl. 1002 (1753).

Cheng et Fu (1978) recognize three Asiatic species of *Thuja*. Little (1979) accepts 2 species of American *Thuja*.

- 1- *T. koraiensis* Nakai "Korean Thuja"
 Bot. Mag. Tokyo 33: 196 (1919).
 N. Korea: Kogen Province, Diamond Mts., Miroku-ho to Laoling-san,
 S. Kankeyo Province, 800-2000 m.
- 2- *T. occidentalis* L. "Western Thuja"
 Sp. Pl. 1002 (1753).
 Canada, S.E. Manitoba to W. North Carolina, U.S.A., to 914 m.
- 3- *T. plicata* Donn. ex D. Don. "Giant Thuja"
 ex Lamb., Descr. Gen. Pinus 2: 19 (1824) = *T. gigantea* Nutt., J.
 Acad. Nat. Sci. Philad. 7: 52 (1834).

S.W. Canada; U.S.A.: S.E. Alaska to W. Montana to N.W. California, 914-2134 m.

- 4- *T. standishii* (Gord.) Carr. "Japanese Thuja"
 Tr. Conif. ed. 2. 108 (1867) = *T. japonica* Maxim., Bull. Acad. Sci. St.
 Petersb. ed. 3. 10: 490 (in Mel. Biol. 6: 26) (1860) = *Thujopsis*
standishii Gord., Pinet. Suppl. 100 (1862).
 C. Japan: N. Hondo; Shikoku, 500-2500 m.
- 5- *T. sutchuensis* Franch. "Szechuan Thuja"
 J. de Bot. 13: 362 (1899).
 China: N.E. Szechuan, to 1400 m.

THUJOPSIS (Linn. f.) Sieb. et Zucc. (Cupressaceae)

Fl. Jap. 2: 32 (1842-70).

Gaussen (1968) accepted one species and one variety of *Thujopsis*.

- 1- *T. dolabrata* (Linn. f.) Sieb. et Zucc. "Southern Japanese Thujopsis"
 Fl. Jap. 2: 34, t. 119-120 (1842-70).
 S. Japan: Hondo; Shikoku Islands; Kiu-shiu Island, 1800-2000 m.
- 1b- *T. dolabrata* var. *hondai* Makino "Northern Japanese Thujopsis"
 Bot. Mag. Tokyo. 15: 104 (1901).
 N. Japan: Hiyama; Matsumae; Nishi; Kamiiso and Kameda Districts.
 A distinct variety, differing in its cones lacking umbos and its obtuse leaves.

TORREYA Arn. (Taxaceae)

Ann. Mag. Nat. Hist. 1: 130 (1838) = *Tumion* Raf., Amen. Nat.
 63 (1840).

Five species of *Torreya* are accepted here. Other taxa accepted by Cheng et Fu (1978) seem to be based on minor differences in cone shape and geographic distribution.

- 1- *T. californica* Torr. "California Torreya"
 N.Y. J. Pharm. 3: 51 (Feb. 1854).
 U.S.A.: N. California, C. Coast Ranges and W. Sierra Nevada, 914-1981 m.
- 2- *T. grandis* Fort. ex Lindl. "Grand Torreya"
 Gard. Chron. 788 (1857).
 China: Anwei to Kweichow, to 1400 m.
- 2b- *T. grandis* var. *fargesii* (Franch.) Silba, comb. nova. "Farges Torreya"
 Synonymy: *T. fargesii* Franch., J. de Bot. 13: 264 (1899) = *T. yunnanensis* Cheng et L.K. Fu, Acta Phytotax. Sin. 13(4): 87, f. 55 (1975).
 China: Yunnan, Salouan Valley; Szechuan; Hupeh; Shensi, 1000-3400 m.

- 3- *T. jackii* Chun "Chekiang Torreya"
 J. Arn. Arb. 6: 144 (1925).
 China: Chekiang, Hsien-Chu Hsien, 400-900 m.
- 4- *T. nucifera* (Linn.) Sieb. et Zucc. "Japanese Torreya"
 Abh. Bayr. Akad. Wissensch. 4(3): 234 (1846).
 Japan : central Honshu.
- 5- *T. taxifolia* Arn. "Florida Torreya"
 Ann. Mag. Nat. Hist. 1: 130 (1838).
 U.S.A.: S.W. Georgia, Decatur County to Jackson County, N.W. Florida,
 to 30 m., many trees died from recent blights.

TSUGA (Endl.) Carr. (Pinaceae)

Tr. Gen. Conif. 83 (1847) = *Cathaya* Chun et Kuang, Bot. Journ URSS
 43 (4): 461-464 (1958).

Gaussen (1966) had noted the close relationship of *Cathaya* to *Tsuga*. In both *Cathaya* and *Tsuga* the chromosome number is $2n = 24$ (Chu et Sun, 1981). *Cathaya* resembles *Tsuga mertensiana* in its thick leaves that are arranged in whorls. Like *Tsuga* the leaves of *Cathaya* also leave a prominent decurrent base scar (pulvinus). In both *Cathaya* and *Tsuga* the cone-scale bract is non-lobed.

- 1- *T. argyrophylla* (Chun et Kuang) De Laubenfels et Silba, comb. nova.
 "Cathaya Hemlock"
 Synonymy: *Cathaya argyrophylla* Chun et Kuang, Bot. Journ. URSS 43:
 (4): 462, t. 1-5, 7 (1958) = *Cathaya nanchuensis* Chun et Kuang, l.c.
 463, 466, t. 6-7 (1958) = *Pseudotsuga argyrophylla* (Chun et Kuang) Greguss,
 Bot. Kozl. 57: 54 (1970), nom illegit, basionym not fully cited.
 China: S.E. Szechuan, Nanchuan; N.E. Kweichow, Taochen; S.W. Hunan, Hsinning;
 N.E. Kwangsi Chuang, Lungsheng, 1400-1800 m.
- 2- *T. canadensis* (L.) Carr. "Canadian Hemlock"
 Tr. Gen. Conif. 189 (1855).
 Canada, S. Ontario to N. Alabama, U.S.A., 610-1700 m.
- 3- *T. caroliniana* Engelm. "Carolina Hemlock"
 Bot. Gaz. 6: 223 (1881).
 U.S.A.: S.W. Virginia to N.E. Georgia, 762-1219 m.
- 4- *T. chinensis* (Franch.) Pritz. "Chinese Hemlock"
 Bot. Jahrb. 29: 217 (1901) = *T. chinensis* var. *oblongisquamata* Cheng
 et Fu, Acta Phytotax. Sin. 13(4): 83 (1975) = *T. chinensis* var.
robusta Cheng et Fu., l.c. (1975) = *T. forrestii* Downie, Notes Bot.
 Gard. Edinb. 14: 18, f. 194 (7) (1923) = *T. tchekiagensis* Flous,
 Bull. Soc. Hist. Nat. Toul. 69: 6, f. 1-12 (1936).
 China: Anwei to Szechuan, 600-3962 m.
- 4b- *T. chinensis* var. *formosana* (Hayata) Li ex Keng "Formosan Hemlock"
 Taiwania 5: 64, t. 19 (1954) = *T. formosana* Hayata, Gard. Chron. ser. 3.
 43: 194 (1908) = *T. chinensis* var. *daibuensis* S.S. Ying, Bull. Exper.

For. Nat. Taiwan Univ. 114:150 (1974).

Endemic to Taiwan, Mount Niantaka; Arizan and Nanto, 1300-3000 m.

- 5- *T. diversifolia* (Maxim.) Mast. "Northern Japanese Hemlock"
J. Linn. Soc. 18: 514 (1881).
N. Japan: C. Hondo; Nikko and Chichibu Alps, 600-2700 m.
- 6- *T. dumosa* (D. Don) Eichl. "Himalayan Hemlock"
Engler U. Prantl., Pflanzenfam. 2(1): 80 (1877) = *T. yunnanensis*
(Franch.) Pritz., Bot. Jahrb. 29: 217 (1901).
N. India; Nepal; Bhutan; China: Tibet to W. Szechuan, 2300-3500 m.
- 7- *T. heterophylla* (Raf.) Sarg. "Western Hemlock"
Silva No. Am. 12: 73, pl. 605 (1898).
W. Canada; U.S.A.: S.W. Alaska to N.W. Montana to N.W. California, 610-1829 m.
- 8- *T. longibracteata* Cheng "Bristecone Hemlock"
Contrib. Biol. Lab. Sci. Soc. China, Bot. ser. 7: 1, f. 1 (1932)
= *Nothotsuga longibracteata* (Cheng) Hu, 64 (1951).
China: Hunan; Kweichow; Kwangtung; Kwangsi Chuang, 300-2300 m.
- 9- *T. mertensiana* (Bong.) Carr. "Mountain Hemlock"
Tr. Gen. Conif. ed. 2: 250 (1867).
W. Canada; U.S.A.: S.W. Alaska to C. California, 1067-3353 m.
- 10- *T. sieboldii* Carr. "Southern Japanese Hemlock"
Tr. Gen. Conif. ed. 1: 186 (1855).
S. Japan: Shikoku; S. Hondo and Kyushu, 300-1800 m.

WIDDRINGTONIA Endl. (Cupressaceae)

Gen. Pl. Suppl. 2: 25 (1842).

The genus *Widdringtonia* comprises three species, all of which are native to South Africa (Palmer et Pitman, 1972).

- 1- *W. cedarbergensis* J.A. Marsh "Clanwilliam Widdringtonia"
Bothalia 9: 125 (1966) = *W. juniperioides* (L.) Endl., Syn. Conif. 32 (1847).
South Africa: S.W. Cape Province, Cedarberg, 914-1981 m.
- 2- *W. nodiflora* (L.) Powrie "Mountain Widdringtonia"
Journ. So. Afr. Bot. 38(4): 301-304 (1972) = *W. cupressoides* (L.) Endl., Syn. Conif. 32 (1847) = *W. dracomontana* Stapf., Kew Bull. 206 (1916) = *W. whytei* Rendle, Trans. Linn. Soc. ser. 2, 4: 60 (1894).
South Africa; Mozambique; Rhodesia; Malawi, to 2590 m.
- 3- *W. schwarzii* (Marloth.) Mast. "Willomore Widdringtonia"
J. Linn. Soc. Bot. 37: 269 (1905).
South Africa: S. Cape Province, Bavianskloof and Kouga Mts., 792-1219 m.

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Addenda

After this manuscript was already in press, reprints of two relevant papers by Professor De Laubenfels of Syracuse University were received. New information concerning the *Podocarpaceae* is noted here below.

The first paper is entitled Pacific Plant Maps (Pacific Plant Areas 4: 204-217). De Laubenfels (1984) records *Halocarpus* as occurring in subtropical forest and in subalpine shrub regions, not extratropical areas. Another distinction for *Falcatifolium* is its red cones. *Dacrydium fonkii* is mapped from Valdivia south to Santa Ines Island in Chile. Further, three Conifer species are referred to as rheophytes, these include *Dacrydium guillauminii*, *Pecussocarpus minor* and *Podocarpus novae-caledonie* (rheotropism refers to the ability of a plant to grow with or against a current of water).

The second paper is entitled Una Nueva *Podocarpus* (*Podocarpaceae*) de Espanola. This paper describes a new species of *Podocarpus*, thus making 555 species of Conifers accepted here, and 95 species of *Podocarpus*.

95- *Podocarpus hispaniolensis* De Laub.
Moscosa (1984-5).

"Hispaniola Podoberry"

A tree to 10 m. tall with a trunk to 1m. in diameter. Buds globose 2-3.5 mm. wide x 2-3 mm. long, with imbricate scales. Leaves linear-elliptic 3.5-8 cm. long x 6-11 mm. wide, **narrowing at the apex, midvein prominent**, petiole 1-3 mm. Cone 7 mm. long x 4 mm. wide with a distinct apical crest, receptacle 8 mm. red, cone peduncle to 7 mm.

Dominican Republic: Peravia Province, Nacimiento del Rio Mahoma; La Vega Province, La Sal, 800-1100 m., humid forest.

This species is related to *P. purdieanus*.

Additional Notes

Podocarpus micropedunculatus De Laub. produces rhizomes in the wild (De Laubenfels, pers. comm., 1984).

On page 49 of this manuscript I cited *Pinus discolor* Bail. et Hawksw. and *P. johannis* M. F. Rob. as synonyms of *P. cembroides* Zucc. However, descriptions of these two questionably distinct taxa by Bailey and Hawksworth (Phytologia 53: 226-234. 1983) seem to match that of *P. culminicola* Andr. et Beam. Therefore, it may be possible that *P. discolor* and *P. johannis* are synonyms of *P. culminicola* rather than *P. cembroides*. The distribution of *P. culminicola* would be from S.E. Arizona (U.S.A.) to San Luis Potosi (Mexico) at 1300-3688 m.

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